School Bulletin Publications

# DeGraff's School-Room Guide

Enlarged Edition

THE

# School-Room Guide,

EMBODYING THE INSTRUCTION GIVEN BY THE AUTHOR AT

TEACHERS' INSTITUTES.

IN NEW YORK AND OTHER STATES,

AND ESPECIALLY INTENDED TO ASSIST

PUBLIC SCHOOL TEACHERS

IN THE

PRACTICAL WORK OF THE SCHOOL-ROOM.

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BY

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*Second Edition. Carefully Revised.*

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TO THE

TEACHERS OF OUR PUBLIC SCHOOLS,

TO WHOM

HAVE BEEN ENTRUSTED THE TEACHING

AND

THE TRAINING OF THE RISING GENERATION,

THIS VOLUME,

WRITTEN FOR THEIR AID AND ENCOURAGEMENT,

IS MOST RESPECTFULLY DEDICATED

BY THEIR FRIEND,

THE AUTHOR.

# PREFACE.

Manuals, both general and special, have been published, relating to the teacher's work. Information scattered through a multitude of volumes is usually inaccessible to those by whom it is most needed; and consequently, the most important results of study and research are often of no avail to those whose special office it is to apply them to a practical purpose. Hence the need of works that present in a condensed form, and so as to be easily referred to, the important facts of pedagogy.

Accordingly, the first announcement of this work was greeted with the most earnest expressions of approbation and welcome. The design was to prepare a work which, while comprehensive and complete within its scope, would like, the dictionary, be upon every teacher's desk, to be consulted whenever occasion might require, thus affording information and practical aid at every exigency of his daily labors.

The *School Room Guide*, it must be born in mind, is but a pioneer, opening out, it is hoped, a wide path for future literary and professional effort in the same direction. The author is by no means so presumptuous as to suppose that he has produced a work without fault or blemish; it will doubtless share the fate of all books of its class, the scrutinizing crit-

icism of the public. In future editions of the work, pains will be taken to correct what is faulty and to improve what is imperfect; any assistance which those who appreciate the aim of the work may be able to render that end, will be gratefully acknowledged.

The views contained in this Manual are the result of a prolonged experience in the school-room and in teachers' institutes.

The labor expended in the preparation of the volume was very great. It has formed a daily subject of thought for the past five years. Many of the lessons have been revised three or four times.

This is hardly the place to confess how often the task was about to be abandoned from the disproportion felt to exist between its magnitude and the limited powers that could be summoned to execute it; but it was as often resumed, and is now completed—*completed*, but not PERFECTED.

This work has been prepared with three objects in view: first *completeness*, that nothing be wanting to assist the teacher or student; second, *correctness*, that nothing erroneous be taught; and, third, brevity, that its readers might not be obliged to *read volumes* in order to *learn how to teach* the difierent subjects.

To carry out the plan of this book, much reading, as well as much thinking, has been done; to tell where and by whom this *fact* or that *method* was obtained is an impossibility.

Wishing to do justice to everybody, no claim that may be fairly made to any idea, fact, or method in it

will be disputed ; but it is hoped that something may be left even when all claims are satisfied. Nothing, however has been taken from others and used without *close investigation.* All facts, methods and principles found in the book, come whence they may, have been fused into a *common whole.* The whole—this collecting and uniting of the scattered fragments of thought concerning education—this system,—is what the author asks credit for, if credit be deemed his due.

In every subject the author has given : first, an introduction, followed by several lessons upon the same subjects; second, explicit directions; third, cautions to be observed ; and fourth, results to be attained.

It is hoped that in this volume a systematic treatise for the special guidance of the teacher may be found upon all subjects taught in our public schools.

As a preparation for the successful study and practice of this book, it is necessary to understand the several branches of knowledge taught.

After the students or teachers become familiar with the subjects, they should study the directions,—or, as they are termed—methods of teaching.

By study, much may be accomplished with it; without study, little.

The wise teacher will remember that the methods presented in this work are offered as *aids* to honest effort, not as *substitutes* for personal exertion.

The teacher who uses them as mere machines for lessening the labor of thinking, will fail. No one can

succeed by blind imitation. All successful teachers must work out their own salvation in reaching a rational solution of the problems presented by their profession.

These methods are the fruits of practical experience and definite principles of action. The teacher should study, digest and appropriate the underlying principles, before attempting to apply the forms.

There can be no efficient substitute for the individuality of the teacher.

The power of a formal method lies in its suggestiveness; it gives direction to the thoughts of the honest inquirer and pilots him toward the goal of success: but he must attain it by his own persevering effort.

Teaching is an *art* as well as a *science;* it requires apprenticeship in doing things as well as in reasoning out relations.

The condition of success in every calling is personal strength; the armor of Achilles would be only a burdensome obstruction to a stripling. Hobby riding gives a delusive appearance of progress, but the age runs away from the rider.

The author acknowledges his indebtedness to the educational works of the various publishing houses of New York: among them, Scribner, Armstrong & Co.; Ivison, Blakeman, Taylor & Co.; A. S. Barnes & Co; Harper & Brothers; Clark & Maynard; Taintor Brothers, Merrill & Co.; and D. Appleton & Co.

To all who have aided in the work, the thanks of the author are due; it could not have possessed the

value which may, with considerable confidence, be attributed to it, had it not been for cordial support; and certainly could not have earned the approval which it may justly be expected to receive. The author also takes occassion to express his obligations to the many friends who have afforded valuable aid in giving important advice, or in affording needed information. Among the number are Dr. Joseph Alden, president of the State Normal School at Albany; Miss Minnie Sherwood, principal of public school, Auburn, N. Y.; John Kennedy, Buffalo, N. Y.; also to associate instructors, school commissioners and superintendents of public schools.

To all of these the author would extend his grateful acknowledgment for encouragement and valuable suggestions.

Sincerely hoping that this Manual will contribute to the cause of education, it is most respectfully submitted to the public.

ALBANY, November 1, 1877.

## PREFACE TO THE SECOND EDITION.

The first edition of this work having been entirely sold before it was received from the binder, I am compelled to make this revision more hasty than I could have desired. The subjects have been entirely rearranged and indexed by head-lines, however, and many corrections have been made. I shall be glad of suggestions for future revision.

E. V. DEGRAFF.

ALBANY, December 15, 1877.

"Words are things; and a small drop of ink, falling like dew upon a thought, produces that which makes thousands, perhaps millions, think."—*Byron.*

"The fool hath planted his memory with an army of words."—*Shakspeare.*

"In the commerce of speech use only coin of gold and silver. . . . Be profound with clear terms, and not with obscure terms."—*Jaubert.*

"It is highly important, that whatever we learn or know, we should know CORRECTLY; for unless our knowledge be correct, we lose half its value and usefulness."—*Conversations on Botany*

# READING.

**Methods Used in Teaching Children to Read.**

*Methods.*

1. The Word Method.
2. The Object Method.
3. The Phonic Method.
4. The Phonetic Method.
5. The Phonotypic Method.
6. The Word-Building Method.
7. The Look-and-say Method.
8. The Sentence Method.
9. The Drawing Method.
10. The A, b, c, or Alphabetic Method.

That teachers may distinguish good methods from poor ones, descriptions will be given of some of the plans employed for the first lessons in reading.

Some are old, long, unnatural and tedious, affording little else than monotony to stimulate the child's desire to learn. Others may be shorter, but none the less unnatural and arbitrary.

Some are unphilosophical, and leave no cause for surprise that so many children flounder at the very threshold of knowledge, the very place that should be made most attractive. The Word Method will receive close attention, and it is hoped that those teachers who are not familiar with it will study it and use it.

## How fo Teach Pupils to Read by the Word Method.

*I. Directons.*

1. Call the attention of the children to some object.
2. Ask questions about the object.
3. Talk to the children about the object.
4. Ask the children to give the name of the object.
5. Show a picture of the object.
6. Make a drawing on the board of the object.
7. Print and write the word on the board.
8. Let the pupils copy the word on their slates.
9. Group words into phrases.
10. Group words into sentences
11. After the pupils learn one sentence, use it in making other sentences.
12. Select words that are the names of familiar objects.

*II. Cautions.*

1. Present only two or three new words for each lesson.
2. Teach the children to recognize words as signs of ideas.
3. At first give no attention to the elements of which words are composed ; as the elementary sounds, and letters.
4. Attempt no spelling of any of the words.

*III. Results.*

1. Knowledge.
2. Naturalness of expression.
3. Fluency.

REMARKS.—In the earliest stages of the course, teaching precedes learning; the child's steps are guided and upheld by the teacher; his way is made clear for him, and his difficulties are anticipated. It is essential that the child shall have a liking to the work in which he is engaged. It is the spirit of the teacher rather than his methods that ensures success in teaching little ones to read.

In the word method, we begin by teaching words, leading the children to recognize them as wholes. This method is now used extensively; it was the method used by the race in developing the language. Nature is the guide of both parents and children. There is a fitness in her means that secures, in the most simple way, the most desirable ends. We have become artificial, mechanical in teaching; we need to retrace our steps and imitate nature's process.

**Follow Nature's Plan.**

Nature begins with objects—the idea first, its signs second, and the ability to represent the idea of its signs third—the natural order of learning language, and the natural order of using it, are made to correspond. The word soon becomes familiar to the child. It is the object of thought.

The word method begins with words, and not letters. To teach the word "hat" it does not teach first the letters *h*, *a*, *t*, and say "*hat;*" but it takes the word and calls it "*hat*," without any reference to the fact that the printed word is made up of letters.

**The Thing Before the Sign.**

The thing before the sign is the rule in teaching.

Words that are not signs of things can be illustrated by examples: for instance, *white*, by showing the *color; runs*, by showing the *act; on*, by showing the *position*, etc. By this method it will take no more time to teach the word, its elementary sounds, letters and spelling, than the letters alone by the old way of teaching the letters first.

Let the teacher aim to get the children to talk freely. If possible, present a real object to the class; a picture, or a drawing. Ask questions to draw out what the children know of the object. You now have excited an interest; show the class the word; print or write the word under the drawing; tell the children that the word is a picture of the real object; require the children to pronounce it several times; print the word in several places on the board; and require the children to pronounce it in concert.

In like manner teach quality words, for example "red;" show an object that is red, and print on the board the words, "a red cap," and request pupils to read the phrase. That the plan of teaching children to read by the word method may be more clearly understood and readily applied, the following directions are given:

### How to Teach the Word Method.

Let the teacher begin by a familiar conversation with the children about some object. It is of little importance what words are taught first, if the words are short ones and familiar to the children by use in conversation, and the object which the words repre-

sent and the pictures can be readily shown. The object of the talk and questions should be to put the child in conscious possession of a knowledge of the thing, or of what the word represents.

When the child has this knowledge, and not before, the teacher may show him the sign, i. e., the word.

As soon as the word is presented the child should print it on his slate. A little practice will enable the child to print it readily. The printing will fix the word in the mind.

In very many of the best schools in our cities the children are taught at first to write the word; not permitted to print it for the reason, that in after life we use the script, not the printed forms.

If the pupils are receiving, as they should be, daily lessons in writing, in a very short time they will be able to copy the sentence from the board on the slates.

This is a very important exercise, not only on account of the practice in writing which it affords, but for giving the children something attractive and useful to do, and preventing mischievous habits, greatly lightening the burdens of disciplining them. The teacher should take some sharp instrument and rule one side of the slate, and the children should be encouraged to do the work neatly and correctly.

### Letters and Sounds.

The child knows nothing of vowels, consonants and articulation; nothing about letters, when he looks upon the printed page.

The word, the word! This is the object of thought.

The printed word is the object presented to the mind of the child. It is presented through the eye. It is known by its form ; the child learns to recognize the words by their forms, as it learns to recognize other objects. The names of the letters are no guides to the correct pronounciation of words, and they can be of no possible service to the children in learning to read.

After the children have made considerable progress in reading words, the teacher may call their attention to the elementary sounds of which the words are composed.

**Combined Method.**

Some teachers combine the Word and Phonic Methods, and after the word is learned by sight, teach the elementary sounds. This is not necessary to this plan of teaching reading, and if the teacher thinks best, may be omitted.

Children have been taught to read in a very few weeks by this plan, and we would encourage primary teachers to try it. It is very useful in cultivating distinctness in articulation, and in aiding the children to acquire new words.

**The Names of Letters.**

When the pupils have been made familiar with the words that have been taught by sight, so as to readily pronounce them, and give their elementary sounds, the teachers may call the attention of the children to the names of their letters; but as a rule the children will learn the names of the letters soon enough, without any help from the teacher.

As soon as the letters are taught, by all means show their use by putting them together and making the word; use the same letters in forming new words.

There is but little variance between the Object Method and the Word Method. The introductory part is the same, and both should be combined in order to interest the children. Whole words should be presented, and the pupils required to pronounce them, without spelling, by sight. Subsequently the analysis of these words into sounds and letters may be taught.

First, teach words that are the names of things; then words representing the names of qualities and actions. The little connective words and those that are used as substitutes for other words, should not be taught until they are needed in the construction of phrases and sentences.

We will briefly refer to the other methods used in teaching children to read.

**The Object Method.**

The children's attention is first directed to some object with which they are familiar by sight, name and use.

The teacher shows the object to the children, and the name is given by the children. If they cannot give the name, the teacher tells them. The teacher presents a picture of the object, or makes a drawing of it upon the board; then the name is plainly written under the drawing. The pupils are now taught to distinguish from one another the object, the picture of it, and the word representing it.

### Steps in Reading by the Objeet Method.

The following order should be observed in teaching beginners to read by the Object Method, as used by N. A. Calkins, Assistant Superintendent of Schools in New York city:

*First Step.*—Teach whole words by sight that are already known by hearing, as signs of objects, qualities and actions.

*Second Step.*—Teach the analysis of the word by its elementary sounds.

*Third Step.*—Teach the analysis of the word by the names of its letters, and their order in spelling it.

*Fourth Step.*—Require the pupils to pronounce the word; sound it; spell it.

*Fifth Step.*—Group words into phrases and sentences.

The children will learn new words by comparing the known words with the unknown.

### The Phonic Method.

Every intelligent and unprejudiced mind will welcome any means by which loose and bad habits of enunciation may be cast off, and correct ones formed in their stead.

Children who have been taught and accustomed to say judgmunt for judgment, read'n for reading, an for and, muss for must, pārent for pârent, păss for pâss, etc., will not be likely, by a single effort, to set their speech right. By well directed and persevering effort they can do it; with proper guidance and encouragement they will do it. A thorough knowledge of the elementary sounds is essential to success in the

Phonic Method. It must be made a careful study and the teacher should master it.

The Phonic Method consists in making the learner acquainted with the powers of the letters, so that when words are before him, he may, by uttering the sound of each letter in succession, construct for himself the sound of the word. Such a method, says John Gill, of the Normal College, Cheltenham, it is impossible to have in a language like the English. A purely phonic method is possible only where the number of letters and elementary sounds correspond where the same letter always represents the same sound, and where, in the spelling of words, the number of letters and of sounds agree. But these conditions in English are impossible. The letters are but five-eighths of the elementary sounds; one letter often represents two or more sounds; some sounds are represented by more than one letter, and often letters are found not sounded at all.

The principal advantage of this method is, that it puts into the hands of the children a key by which they may be able to help themselves. The elementary sounds must be known before the children can take a single step in advance, without the aid of the teacher. By following the word method strictly, the child is unable to advance, except as it is assisted by the teacher.

The best results have been gained by the primary teachers in using the Phonic Method as auxiliary to the Word Method, but not as a substitute for it. The word must be the unit of thought; it is the natural

way to begin with the units of language, which are words. Language deals with thoughts; words are symbols of thought.

Letters are elements of the forms of words; simple sounds are the elements of the sounds of words; neither of these elements are units in language. The child must know the sounds and the names of the letters; through these aids it may be able to help itself. This process, however, is not adapted to the child, until it has learned some words as wholes, as units of language, and as representations of thoughts.

Another advantage also is, it teaches the children from the beginning to enunciate distinctly; many other advantages are gained by combining the Word and Phonic Methods.

With all the plans that have been considered, let the teachers bear in mind that children can never learn to read with any degree of ease until they are able to call instantly the words in the sentence without stopping to analyze them.

By the method suggested, children are enabled to read with more interest and expression in a far shorter time than by the plans heretofore generally pursued.

### The Phonetic Method.

The Phonic and Phonetic Methods are distinct; the phonetic method provides signs to represent all the sounds of the language, using the common letters each to denote but one sound of that letter, and providing slight modifications of these letters to denote other sounds. This method is used with success in those schools provided with Leigh's Phonetic Reader.

### The Phonotypic Method.

This is another form of the Phonic Method, providing a character or letter for each sound in the language.

The pupil is required to learn forty or more letters in place of twenty-six.

There are those who claim that pupils will learn both methods, and become able to read better thereby, in a given time, than they usually do when taught entirely from the common print.

This method may be used with success; but, as the schools are not provided with books on the Phonotypic plan, we will not enlarge upon it.

### The Word-Building Method.

Its plan is to begin with words of one letter, as A, I, O, and gradually form new words by prefixing or affixing single letters. The child is taught first to pronounce the word, then the letters that form it. Separate letters of the alphabet and spelling are taught by asking questions similar to the following:

"What letter is placed after *a* to form *an?*"

"What after *an* to form *and?*"

"What before *and* to form *land?*"

### The Look-and-Say Method.

This method is that in which, after the children have mastered the alphabet, all words are read without spelling.

Attention is directed to each word as a whole, and its sound associated with it as a whole.

In no case is the learner allowed to spell a word that he may afterwards recognize and pronounce it.

The following things are advanced in favor of this method :

*First*—For mastering the word by the eye.

*Second*—For recognizing the word in the sign, and for acquiring practical acquaintance with the number of letters and syllables.

*Third*—For its suitability to the circumstances of common schools.

The above reasons must commend this method to many teachers who have not received special training. It best meets the requirements of class instruction. In the class, the aim is to bring out the energies of all. This is done through emulation and self-respect.

Now when spelling is permitted, a child has little inducement to exert itself to retain a word once seen; but let spelling be forbidden, let the remembrance of the word be thrown on the eye, and emulation will stimulate some to retain it, and to give it when called upon; and self-respect will be appealed to in the others, not to require to be always told by a sharper companion. It is a method which requires no special preparation, like the phonic, and therefore may be entrusted to an inexperienced teacher.

**The Sentence Method.**

In this method the teacher does not begin with the letters, nor with separate words, but with words in combination, that express a thought. Using this combination of words as a unit, the separate words are learned, as the separate letters are learned by the Word Method, that is, without special effort and almost, if not quite, unconsciously.

In teaching this method let it be the aim of the teacher, not so much to teach separate sounds, letters and words, as to *teach* and *secure* the proper expression of thought.

The letters and words must be known, but as they will necessarily become known by this method without much special teaching, they are regarded and treated as of secondary importance for the time being.

The attention of the childen should be directed to the thought. To this end, real objects and facts are at first employed to appeal to the senses and to demand of the child words to give the thought oral expression.

In learning to talk, children acquire ideas from objects, and then seek language to express them. It requires a combination of words to express a thought, or to give birth to a new idea or thought.

The advantages claimed for this method over others are:

*First*—It is a perfectly natural way—teaching the child to read very much as he learned to talk.

*Second*—The attention of the child is directed to the expression of the thought, hence he reads easily and naturally.

*Third*—It makes the child thoughtful, hence it cultivates his intelligence.

*Fourth*—In doing this work, it is claimed that it accomplishes all that the other methods do, without additional time.

### The Drawing Method.

As all words are made up of the letters of the alphabet, and differ from each other only in the order and number of letters, the first step in teaching reading, whatever may have been the subsequent method has been to teach the children these characters.

Many have been the devices to accomplish this, but this method we will present as one of the most successful. It is the Drawing Method ; that is of teaching the child to draw the letter, and then learn its name.

This process combines from the first the two great instruments of teaching and reproducing—the former giving knowledge, and the latter testing it and giving skill.

Since curiosity, which is so strong in the child, seeks its gratification in finding new forms, this method of drawing can be used as a means of training his eye to quickness and accuracy of observation. Lessons should be given upon straight, curved and crooked lines, that the children may know what is meant by the terms used.

By actually drawing and naming the parts of a letter, its form and name, as a whole, may be easily impressed on the memory of the pupil. In this manner the learning of the alphabet, instead of being a spiritless task, as it has too often proved, is exceedingly attractive to the child and becomes a valuable aid in cultivating the sense of sight.

This method may be used with a fair degree of success in ungraded schools.

**The Alphabet, or A B C Method.**

The children by this method, are taught the names of the letters, and they begin to spell words at first; this is a method of learning spelling and reading at once, or rather of learning to read by learning to spell. Spelling may be learned through reading, but reading through spelling NEVER. The attempt to combine two things in one lesson, by diverting the learner's attention, interferes with his progress in recognizing the words.

This method was universally used years ago, and even now is used in many of the ungraded schools. In the best schools, the name or alphabetic method is superseded by some of the modern ways. It is an imperfect method in that the names of the letters do not guide to the pronunciation of the word.

Take the word *mat;* by the same method, the name of the first letter is *em;* the second letter is *e*, and the third *tee;*—pronounced *em ā tee;* by the phonic it becomes *m-ă-t.*

This method produces halting, stumbling readers, and it is now abandoned by all good teachers of reading; it also lays the foundation for mechanical, unintelligible reading, which characterizes most of the schools where it is taught.

REMARKS.—We have given ten different methods of teaching reading; to those who have no method, we hope that we offer one, at least, that they may use with success.

Give direct attention to the primary classes in reading; if a child is not taught to read well during

the first two years in school, he will probably be a poor reader through life.

### Primary Reading.

*I. Directions.*

1. Train the pupils to pronounce the words readily at sight.

(*a*) Print or write the words on the board in columns; pupils pronounce them at sight.

(*b*) Write difficult words on the board, and syllabicate them; mark the accented syllables; pupils pronounce them.

(*c*) Require the pupils to pronounce the words forward; reverse.

(*d*) Require the pupils to bring in a portion or all of the reading lesson upon the slate; pupils read the lesson from the slate.

(*e*) Alternate.

*II. Cautions.*

1. Present to the pupils only one difficulty at a time

2. Never permit the pupils to spell words in reading.

3. Insist upon correct articulation and pronunciation.

Remarks.—If the pupils in the first lessons of reading are taught correctly, they will not spell words audibly.

Many of the common faults in reading may be traced to the improper methods in use during the first lessons in this subject. Bad habits at this period

usually cling to the pupils during all their school days, and often seriously affect their entire future progress.

The first lessons in reading are of the greatest importance, and they should be given in a proper manner.

To do this successfully there must be a system in the plans pursued.

**Reading Words.**

The pupils must be familiar wih the words of the lesson, so that they can readily pronounce them at sight.

The teacher should introduce a short preliminary exercise, for calling the words at sight, as follows :

Teacher and children alternating one word each ; boys and girls alternating one word each ; careless pupils alternating with class ; each pupil reading a line as rapidly as possible.

In no instance should the teacher let a pupil stop to spell a word. The plan is in violation of the fundamental laws of teaching. It attempts to compel the child to do two things at the same time, and to do both in an unnatural manner, viz. : to learn reading and spelling simultaneously, and reading through spelling.

Reading has to deal with sounds and signs of thoughts. Spelling rests on a habit of the eye, which is best acquired by writing.

In attempting to teach reading through spelling the effort distracts the attention from the thought ; reading furnishes facilities for teaching spelling; but spell-

ing does not furnish a suitable means for teaching reading. If spelling is permitted, a love of reading is not enkindled ; good readers are not produced. The above lesson on "Primary Reading," if faithfully presented, will remedy the defects and not make halting, stumbling readers.

### Phonics.

The teacher should be familiar with the sounds of the letters, and require the pupils to practise on them two or three minutes daily. Let it be a lively exercise, and insist upon clear, distinct articulation.

*Difficulties.*

Attend to one difficult point at a time ; see that the pupils understand it and are able to reproduce whatever you teach them.

### Primary Reading.

*Further Directions.*

1. Train the pupils to read in natural tones.
   (*a*) Request the pupil to look off the book and tell what he reads.
   (*b*) Select a good reader; request pupils to imitate.
   (*c*) Teacher illustrate how a sentence should be read.
2. The teacher should illustrate and define difficult words.
   (*a*) Illustrate by objects, pictures, drawings and diagrams.
3. No definitions should be given to those words whose meaning can be inferred from the context.

4. Every piece should be carefully studied before it is read aloud.

REMARKS.—Reading should not be a mere mechanical exercise. The end of reading is not to give vocal utterance to a succession of words, but to give expression to thought and feeling.

Reading is the most important subject taught in school. It is especially important that it be thouroghly taught in the primary classes. The "sing-song drawl" and the "nasal twang," which so often prevail in the school-room, should be avoided.

Almost all children can be taught to read well; they imitate, unconsciously and naturally, the voices of their playmates.

### Teachers too Ambitious.

Many of the teachers are too ambitious in one direction, that is, to promote pupils to higher books, when they are not qualified.

This is a great mistake. Perhaps three-fifths of the pupils of our country are reading in books which they do not understand, or in which they take no interest; this is one of the principal causes of mechanical reading; through this error in judgment, the pupils have acquired a drawling way, a lifeless, mechanical style.

### Reformation Needed.

I am glad to admit that a reformation has begun in this department of instruction, but it will need the constant and varied efforts of teachers and parents for years in order to overcome the effects that have already resulted from past negligence.

### Means of Improvement.

Let the teacher select (from some book or magazine) a story which he will be sure shall interest the pupils.

Let him give the book containing it to a pupil, asking him to read the story over a few times, to become familiar with it; and at or near the close of school, let the pupil read it aloud to his schoolmates.

As he reads, do not discourage him by too frequent interruptions, but occasionally, when he relapses into a drawl, repeat the passage, kindly, in a better way, and ask him to notice and imitate your manner.

When he has ended, read to them yourself some other good story, and let your style be worthy of imitation.

### Reading Sentences.

Let the standard for good reading be its resemblance to good conversation.

The pupils may be led to attend to the thoughts expressed, by requiring them to find out what the sentences tell without reading them aloud. The teacher may aid them by proceeding in a manner similar to the following: Request the class to study the first sentence, and each member to raise a hand when able to tell what the sentence is about. Call upon different pupils to state, in their own language, what the sentence tells; in this way they will readily learn to read with easy conversational tones.

### Distinct Enunciation.

Special care should be taken in this step to train

pupils in habits of clearness and distinctness of enunciation ; also to read in an easy, speaking voice. Overcome the faults in reading by taking up one kind at a time, and continue the practice until the pupils clearly perceive the fault and take proper means to correct it.

### The Teacher Should be a Good Reader.

As a requisite essential to success, the teacher of reading should be a good reader. With proper management it is a very easy matter to make children read well, and even the teacher that is a tolerable reader may teach pupils to read. That children have learned to read under such teachers I am willing to admit, because the fact is evident ; but that they have been taught by their masters I do not admit, for it is impossible for any person to teach well what he does not understand.

If a child has sometimes learned to read under an incompetent instructor, it has been, not because of the teacher, but in spite of him ; and the question is, not how much has he learned, but how much would he have learned had the teacher been qualified to teach him

### Difficult Words.

The young pupil's knowledge of the meaning of words is limited. One object of reading is to increase the knowledge of words. No definition should be given to those words whose meaning can be inferred from the context.

Resource should be had to a dictionary only when he cannot think out the meaning from the context.

The child learns the meaning of words by hearing them used—seldom by formal definition.

The teacher may impress the idea by resorting to objects, this is the natural way. Sometimes pictures may be at hand to throw light upon the word ; again, a drawing may be given at the board to illustrate the meaning of the word.

### Defining Words in Primary Classes.

In no case should a definition be committed to memory and mechanically recited.

The meaning should be inferred from the context, and the pupil requested to use the word correctly in a short sentence.

Let the pupil tell what the word means in his own language.

A definition is a general truth, a deduction ; children should be taught primary truths, and, as their reason develops, deduce the definitions, rules and principles. Develop correct ideas, then give definitions. We must not encourage teachers to require pupils to commit the definitions to memory in the primary reading books. But we would insist that the pupils understand the meaning of the words used.

### "Mind the Pauses."

Teachers sometimes instruct pupils to stop and count "one" at a comma, "one, two," at a semicolon. This leads to a mechanical, unnatural style of reading. First attend to the reading of sentences, and lead the pupils to see how the pauses aid in understanding the meaning. Do not teach reading

as if attention to " pauses " is the chief object to be attained.

Reciting definitions of pauses is not only useless but it leads to a great waste of time. Teach the use of the pauses in the lesson, instead of the definition of them. A few teachers pay no attention to the explanation of the words, but turn their attention almost entirely to the names and the pronounciation ; important points, to be sure, but by no means the life-giving elements of good reading.

### Qualities of the Voice.

*Pure Tone*—It is a clear, full and cheerful tone. It is the language of common conversation.

*Rotund Tone*—It is the pure tone, rounded, deepened and intensified. It is the language of sublimity, grandeur, awe and reverence.

*Aspirate Tone*—It is whispered utterance. It is the language of hate, fear and secrecy.

*Guttural Tone*—It is a sepulchral tone and has its resonance in the throat. It is the language of hate, rage and contempt.

*Pectoral Tone*—It is low pure tone. It is the language of deep feeling, sorrow.

*Falsetto Tone*—It is a very high tone. It is the language or irritability, etc.

### Emphasis.

*Definition.*

1. A particular stress of voice given to certain words, or parts of a discourse ; a distinctive utterance of words specially significant.

*What Constitute the Emphatic Word or Words.*

1. A new idea or fact, one now presented for the *first* time, constitutes the emphatic word or words.

2. That which presents no new or dominant fact or thought, is the unemphatic clause.

*Characteristics that Mark Unemphatic Clauses.*

1. Repetition.
2. Anticipation.
3. Sequence.
4. Subordination.
5. Knowledge beforehand.

**Rules in Reading.**

Do not require children to commit the rules to memory in reading. They are hindrances instead of helps. If the teachers know how to read, those aids in which many school-books abound, are worse than useless, because positively injurious.

The competent teacher needs but two rules by which to be guided in teaching the pupils to read :

*First*—Make the pupils understand what is to be read.

*Second*—Require them to read naturally. To expect a child to read what it does not understand is unreasonable, and yet nothing is more common.

It is idle to put marks, rules and directions whether by words or characters, into books intended to be read by children, for the reason that they seldom or never use them.

## Special Preparation for Reading.

The teacher should carefully study the reading lesson ; should be familiar with the pronunciation of every word, including its literal and its received meaning. He should give the pupils the history of the author and some of his prominent characteristics, —this will add to the interest. Should awaken thought in the minds of the pupils,—this will secure interest. It matters not how simple the lesson may be, previous preparation is indispensable. Previous study will add new power and generate better methods by means of which success will be insured. The teacher will become independent, self-reliant, and a "law unto himself."

## Intermediate Reading.

### *I. Directions.*

1. Teach and train the pupils to understand.
   (*a*) The prominent objects mentioned.
   (*b*) The prominent facts mentioned concerning the object.
   (*c*) What they read, and to be able to tell the story, or the principal facts in the lesson.
   (*d*) The connected thought, and to express it orally and written.

### *II. Cautions.*

1. Attend to one subject of criticisim at a time, and require pupils to correct.
2. Practice on one sentence at a time.
3. See that all the pupils understand the thought, and are able to express it.
4. Examine the subject carefully before reading.

*III. Results.*

The pupils in the Intermediate Classes in Reading should be able—

1. To pronounce the words accurately.
2. To define the words.
3. To understand the subject-matter.
4. To explain the language.
5. To account for marks of punctuation.
6. To point out what is true, beautiful and good in the sentiment.
7. To show the manner of delivery, and give reason for it.

Remarks.—The number of those who can be properly called good readers in our schools, is small; but how large is the number who can read quite indifferently, or very poorly.

As a general thing it must be admitted that reading has not been well taught in our schools. It has received formal attention and frequent inattention. Time enough is given to the exercise, but not enough attention.

**Intellectual Exercise.**

The elocutionary part of reading should receive but little attention in the intermediate classes. With so many pupils under your training, it cannot be expected that you will go into all the minutia of elocutionary drill. Your aim must be to teach well what you undertake to teach. You cannot even hope to make all your pupils accomplished elocutionists, but you can make them good and intelligent readers. When you find a pupil that

takes to elocution it may be well to encourage it, but not to the neglect nor the expense of other subjects of instruction. It may be asked, what is good reading? I call that good reading when a person reads distinctly, gives the sense with such intonation and emphasis as to be pleasant to the hearer, and in such a manner as to be easily heard and readily understood.

Take, for example, the following beautiful selection, and see how many pertinent questions may be asked in reference to it:

**Nelly.**

Nelly sat under the apple tree,
And watched the shadows of leaves at play,
And heard the hum of the honey bee,
Gathering sweets through the sunny day.

Nelly's brown hands in her lap were laid;
Her head inclined with a gentle grace;
A wandering squirrel was not afraid
To stop and peer in her quiet face.

Nelly was full of a pure delight,
Born of the beauty of earth and sky,
Of the wavering boughs, and the sunshine bright,
And the snowy clouds that went sailing by.

Nelly forgot that her dress was old,
Her hands were rough and her feet was bare;
For round her the sunlight poured its gold,
And her cheeks were kissed by the summer air.

And the distant hills in their glory lay,
And soft to her ear came the robin's call:

'Twas sweet to live on that summer day,
For the smile of God was over all.

And Nelly was learning the lesson sweet
That when the spirit is full of care,
And we long our father and God to meet,
We may go to nature, and find him there.

1. Where did Nelly sit?
2. What two things did she do?
3. What is meant by the leaves at play?
4. What were the bees doing?
5. What is said of Nelly's hands?
6. What is said of her head?
7. What is said of the squirrel?
8. Of what was Nelly full?
9. What is meant by being full of pure delight?
10. Of what four things was it born?
11. What is meant by being born of these things?
12. What did Nelly forget?
13. Why did she forget these things?
14. What is meant by the sunlight pouring its gold?
15. What is meant by kissed by the summer air?
16. What is said of the distant hills?
17. What is meant by the phrase in their glory lay?
18. What is said of the robin?
19. Why was it sweet to live on that summer day?
20. What lesson was Nelly learning?
21. What is the meaning of gathering? Inclined? Peer? Boughs? Nature?
22. Make sentences in which those words in some of their forms shall be used correctly.

23. Write a short composition about Nelly.

DIRECTIONS.—The piece is descriptive and should be so read as to give the hearer a clear idea of the scenes described. State each thing mentioned as though you were telling some person what you had seen.

The frequent or occasional study of reading lessons in this manner will be attended with two advantages. The pupils will read them better, for they will have a sympathy for the author, and a more intelligent perception of the meaning.

The answering of the question will prove very serviceable, by unfolding the sense of the piece, and thus enabling one to read it more understandingly. It will produce *thought*, and whenever we produce thought we secure *interest.*

In intermediate classes constant attention should be given to punctuation, accent, inflection, emphasis and correct pronunciation.

Explanations of historical, biographical or scientific allusions, should be given by the teacher and reviewed in subsequent recitations.

**Rhetorical Division of Language.**

**A.** Composition.
- 1. Prose,
  - *a.* Letters.
  - *b.* Dialogues.
  - *c.* History.
  - *d.* Essays.
  - *e.* Orations, etc.
- and
- 2. Poetry.
  - *a.* Pastoral.
  - *b.* Lyric.
  - *c.* Epic.
  - *d.* Dramatic.
  - *o.* Elegy.

**B.** Subject Matter. { 1. Humorous. 2. Pathetic. 3. Sublime.

**C.** Discourse. – { 1. Narrative. 2. Descriptive 3. Didactic.

NOTE.—The teacher in the higher classes should train the pupils on the above. Let them tell the difference between prose and poetry; the subject matter and the discourse.

### General Remarks on Reading.

No subject is of more importance than how to teach Reading understandingly. Good reading is calculated to develop the mind, the body and the imagination. Although so important, yet how sadly neglected is the power of reading. Teachers are able to give the definitions of Arithmetic, Geography and Grammar, but few can give an intelligent definition of reading.

Elocution is the art of speaking so as to be heard, so as to be felt, so as to impress. The first essential is to speak or read so as to be heard distinctly. Never speak above or below your natural voice; if you do so, the effect will be lost. The three great rules that all should observe in reading or speaking, are: "Be sure you have something to say; be careful how you say it; and stop when you are done." Speak so that the listener may understand you; speak so as to be felt, hence be in earnest; if you do not feel what you say, you cannot expect your hearers to have any feeling.

### How may you Teach so as to Carry Out these Conditions.

We answer, study so as to thoroughly understand what you teach. If you do not know what is required, you are not qualified to teach, and in order to become qualified you must listen to good examples.

### Attend to Faults.

If you have a fault, attend to it, overcome it by practice. Much time must be taken in correcting bad habits of reading, but you must take the time. But whatever you do, be sure to teach the pupils to do it in the right way. If the teacher wishes to succeed he must learn how intonation and articulation are to be taught. Before he can teach it he must learn it. It can only be acquired through study.

Rules in books might as well be omitted ; correct reading must be taught by example. The object of teaching reading is to make good readers. Before good reading and good speaking can be taught it is necessary to learn how to articulate distinctly and pronounce correctly. If you are careless in one single point, your pupils will be careless not only on that point but on others.

In reading you must give each sound its true value. The requirements in reading are two-fold :

*First*—To express rightly what you read, and

*Second*—To do this pleasantly and naturally. A perfect understanding of what you read is the foundation ; you must understand the thoughts of the author and make the thoughts your own.

It is the exception to find good readers in our schools ; the reason is because pupils are not required to study the lesson as in other branches.

**Expression.**

This adds force, meaning, beauty and power to the passage. After the pupils can speak distinctly, they should be taught to express the sense, to give the *exact meaning.* In no other way can this be taught, than through study on the part of the pupils. They must *read* and *think.*

**Posture.**

Pupils should be taught how to stand, and they should not be allowed to utter a word until they assume a position to give full force to their utterance ; they should not be allowed to appear awkward.

Do not allow your pupils to mumble words, smother sounds and destroy the sense of a passage.

The position should be perfectly easy, natural and graceful ; the posture should indicate the sentence to be spoken. Insist upon your pupils always taking an easy, graceful and gentlemanly or ladylike position in reading or speaking.

**Breath.**

Another important point is to know how to breathe properly. It is well to exercise the lungs before we commence to read. The power of the reader or speaker consists in having perfect control of his breathing, so as to utter his words in a proper and most effective manner. It is only when you have perfect control of the breathing that you can give full expression to words and sentences.

**How to Gain Success in Reading.**

The surest way to attain success in reading is to begin to develop thought. Reading may be reduced to a few general rules, namely: You must commence at the right place—at the beginning; go in the right direction; have a high standard in view; be perfectly natural; cultivate by all means naturalness. If the pupils have unnatural tones, make them repeat after you sentences and whole passages. This will insure correct pronounciation, distinctness of utterance and expression.

Let me caution you against placing dependence upon rules of inflection of the voice given in reading books. All that you need is to fully understand the thought; when you have the thought fully, you will know all about inflection of the voice. If a person cannot translate what he reads into his own language, he most assuredly does not understand it. If you cannot bring out in your own languge the full meaning of the lesson, you are not the one to teach, and you should either adopt some other avocation, or go through a rigid course of reading.

A great deal of teaching in reading is a positive injury to schools, and all because the teacher does not know how to teach. "Practice makes perfect;" rapidity and correctness are attained only through frequent repetition No one ever arrives at distinction by sitting with arms folded; you must be willing to think, to exercise, to labor. It is not an easy thing to become a good reader, it is only acquired through practice—continual practice. There is no other way than through practice.

The following rules are taken from "Kidd's Elocution." They should be carefully studied and practiced:

*First*—Understand well what is read.

*Second*—See to it that pupils never read without fulfilling the conditions of proper position and posture,

Make them take the position God intended them to take; train, not teach; there is a difference between the two.

*Third*—Insist upon frequent and natural breathing. Good breathing is essential to health.

*Fourth*—Reach the heart of the pupil. This is done by interesting them. by making them understand what they read.

*Fifth*—Cultivate a perfectly easy, distinct and natural voice, avoid all labored efforts ; let the voice come out full. Let pronunciation be correct, inflection natural ; give the best models, but never rules. Make pupils repeat the pronunciation of words they are in the habit of mis-pronouncing. Modulation and intonation should be varied but always natural.

*Sixth*—Have your pupils speak with naturalness. If the subject be understood any one will speak naturally. Train them to speak by the highest standard they possess.

*Seventh*—Be in earnest. If the pupil has not an earnest manner, it proves that he does not understand his subject.

**These Conditions are Absolutely Necessary to Success in Reading.**

Teacher, whatever else you may teach, do not consider the reading exercise an unimportant one. Teach and train the pupils to be readers. It is the *art of arts*, and in it are the germs of growth and development.

We read in the Bible at the eighth chapter of Nehemiah, eighth verse, how they used to read in olden times:

"So they read in the book in the law of God distinctly, and gave the sense, and caused them to understand the reading."

There are different kinds of reading, which are also often confounded ; mechanical reading ; intelligent reading ; and intellectual reading.

Mechanical reading, *per se*, is no reading at all ; it is but a form of voice training. It may include pronounciation, articulation, enunciation, inflection, tone, pause, harmony, rhythm, and emphasis. A child may learn every one of these, in a foreign language,—learn them to perfection, if he be well drilled in them by means of directions and imitation, and yet not understand one word of what he reads while he gives them.

An intelligent reader is one who understands what he reads, who takes in the author's thought. There are various degrees in intelligent reading. One person takes in the author's thought very vaguely, another much more clearly, another quite clearly and definitely. It is not possible for a young child to be

more than an intelligent reader, but as he grows older he should become more ; yet how many adults there are who never get beyond the child's power of reading. Take, for instance, the well-informed man who never will be wise ; he is eminently an intelligent reader, but there is no hope for him that he will ever become an intellectual reader.

Intellectual reading is not only a taking in, clearly and definitely, of the author's meaning, but it is also a ready recognition of the relation of that meaning, a prompt assimilation of it, and a consequent growth. This is the kind of reading that reigns in the student's den and the philosopher's study. That man who has the original power, or the acquired habit, which is often more than an equivalent for the original power, to grasp readily and clearly the meaning of what he reads, is always one whom all others envy. And yet this power, valuable beyond calculation, may be given to each child in our schools, if we can but find the right way to secure it for him.

The question then is : How shall we train our children so that they shall become not only intelligent but intellectual readers?—so that they shall become not only intellectual silent readers, but also accomplished oral readers?

By assigning to the lesson in voice-training all those exercises which pertain to voice-culture and discipline of the organs, also drill in pronounciation and a consideration of emphasis and pauses, illustrated by mistakes taken from yesterday's lesson and difficuties in to-day's, we shall relieve the reading

lesson proper of the necessity of taking note of all that machinery which produces effect, and leave the teacher and class time and opportunity to study the thought the passage contains, and to give it a free and natural expression. Let it be understood by the class as well as the teacher, that the reading lesson should be a clear, clean-cut process of thought carried on to expression, and should not be interrupted by continued, trivial and harrassing corrections. What is more painful than to see a child rise in his class, full of the thought the passage contains, confident in his power to give it good expression, his eye a-kindle and his cheeks aglow, and then to see him suddenly brought to a blank stand-still by a dozen upraised hands and snapping fingers, because, forsooth, he has omitted an "a," or a "the," or miscalled some simple word he knew quite well, or skipped some useless comma?

Where such practices are allowed, the reading-lesson becomes a mere game in pronuciation, and a correct handling of the voice according to rules. Such games are good to make the children keen-sighted, quick-thoughted, and correct; but their place is not in the reading-lesson, and if we keep them there we shall go on forever teaching only words, words, words.

Let us have first the thought, then the expression, and last and least, the mechanical defects. Better that the thought should be full-born, and clothed in garments with here and there a rent, than that it should be still-born and the garments without a flaw.

As in language, the thought is the root of which the word is the blossom, so in reading, an understanding of the author's meaning is the root of which oral reading is the blossom. If, then, we find our blossoms defective, it behooves us to look to the condition of the roots.

But what method will help us here? How can we make sure that a child understands what he reads? Children imitate so easily, and habit counterfeits nature so closely, how can we be sure that we are not misled? Only by studying the lesson with children; only by having before every reading-lesson a language-lesson upon the subject-matter of the reading; only by compelling the children, by means of questions, to *think*, to *reason*, and to *express*. To express the thoughts of the lesson, first in their own words, and then in the words of the book; also, whenever the subject-matter may be, from any cause whatsoever, vague to the children's minds, by illustrating it with objects, with pictures,—printed pictures, and outline pictures drawn upon the blackboard, and with what the English training-schools call "picturing out words."

# PHONICS.

This important subject receives but little attention in the public schools of the country. Why it is omitted, when it adds so much beauty to expression, is a question unanswered by thousands.

The object of teaching this subject should be—

*First*—To train the organs of hearing so that the children may readily distinguish the sounds heard in speaking and reading

*Second*—To train the organs of hearing so that the pupils may learn to produce the sounds correctly in using language. To acquire an articulation which shall be at once accurate and tasteful, it is necessary :

1. To obtain an exact knowledge of the elementary sounds of the language.

2. To learn the appropriate place of these sounds.

3. To apply this knowledge constantly in conversing, reading and speaking, with a view to correct every deviation from propriety which we may detect in expressing them.

A good articulation is not to be acquired in a day, nor from a few lessons. Practice should begin with the alphabet, and continue through the whole course of education, and even then there will remain room for improvement.

Great care should be taken in giving these lessons, that the class repeat each exercise until all the pupils can make every sound and combination which it contains, readily and perfectly.

The teacher should make the sounds, and then require the pupils to imitate them. The pupils should stand or sit erect, and use the natural tones of the voice. Only one or two sounds should be taken for a lesson.

The exercise should not continue more than five minutes; it may be introduced in the reading or spelling exercise, or the whole school may join in it.

Tell the children "to open the mouth and move the lips," to speak distinctly and to enunciate every sound perfectly. Time should not be wasted in the endeavor to teach children definitions or descriptions of the various sounds of the letters. The chief aim should be to train the organs of hearing to acuteness, and the organs of speech to flexibility and accuracy.

### Notation Marks or Diacritical Signs.

The pupils should be taught the correct sounds and the signification of the different marks. All the vowels and many of the consonants have marks to distinguish their sounds.

After a sound is learned the teacher should write the letter on the board with its proper mark. The pupils should be required to copy and to reproduce every exercise. Let the drill be thorough.

Tell the pupils that when a short horizontal line is placed above the vowels—called the *macron*—it indi-

cates the long sound; that a short curved line with curve downward placed above the vowels—called a *breve*—indicates the short sound; that two dots placed above the letter ä indicate the Italian sound, etc.

We find but very few teachers who are able to give all the sounds of the English language correctly, and many are unable to tell the kind of a mark or sign that indicates a certain sound.

It requires study and practice. We need not expect distinct speaking so long as we neglect this important art.

**Suggestions.**

1. Train the organs of hearing to distinguish readily and accurately the different sounds of language.

2. Train the organs of speech to produce these sounds with ease and accuracy.

3. Train the pupils to the correction of faults of enunciation and pronunciation in reading and speaking.

4. Train pupils in every lesson upon the elements.

5. Master the analysis before you attempt to teach it.

6. Let the drill be accurate

The following pages are taken by permission from Hoose's "Studies in Articulation," the standard book upon the subject, published by Davis, Bardeen & Co., Syracuse, N. Y. Price 50 cts.

## VOWELS = TONIC ELEMENTS.

**1.** Long ā = $\widehat{\text{ā}+\text{ē}}$ = e̲ = *ey* = *ao* = *au* = *ea* = *ay* = *ei* = *ai* = *aigh* = *eigh* = *alf* = a compound, or diphthongal sound, with its radical or initial tone in ā-*le*, and the close or vanish in ē-*ve*: the vanish is not heard until the mouth begins to close while attempting to prolong the radical, thus throwing the tongue up towards the roof of the mouth, which changes the tone into the vanish in ē.

Both initial and vanish are capable of indefinite prolongation; yet for ā the vanish must be very brief.

NOTE. — When used as a word, and unemphatic, *a* has a very brief sound, approaching to that of ŭ, or ŏ, or possibly ĕ.

### FOR PRACTICE.

*1.* āle, fāte, Kāte, hāte, māte, grāy, gāte, re̲.

*2.* prāte, re̲ign, e̲ight, rātio, ne̲igh, āmen, slāin, strāight.

*3.* chāmber, squālor, māin, āid, tiāra, yeā, pāin, obe̲y, wrāith, plā̲yer, apparātus, pā-

**tron**, strāta, pātriotic, āye, De͟y, he͟inous, sāy, tomāto, bāte͟, whe͟y, dāta, cāret, slāte, gäuge, gāol, jāil, dāy, breāk, ve͟il, gre͟y, prāyer, shāik, hālf-penny, sle͟igh, rāy, strāit, dāze, pre͟y, grāze, rājah, prāys, rāil, pāle.

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**2.** Short ă = *ai* = *ua* = *al* = *aa* = a simple element. Yet a better study of it is given by Rush, who considers it = $\widehat{\text{ă+ẽ}}$-*rr* = a compound sound, the initial in ă-*t*, and the vanish in ẽ-*rr*. This appears more clearly if the tone, ă, be inflected either upwards or downwards: the vanish is heard only at the very closing of the sound, as the vocal organs begin to relax their tension. The vanish is very short; the radical is incapable of being prolonged, and is to be uttered with staccato brevity. The tongue is raised not so high as for ē, and higher than for ä; the mouth is wider open than for ĕ.

An attempt to prolong the tone produces a drawl.

It is held, as above remarked, that the sound of ă has no vanish; perhaps it is very generally so regarded.

This sound should never, in practice, be allowed to degenerate into that of Italian *a*, or that of short *e*.

(See Nos. 4 and 8, following.)

**FOR PRACTICE.**

*1.* măn, căt, băt, răt, hăt, măt, măll, găp, săt, mărigold, chănticleer, văt, ăccurate, pecăn, sălver, guăranty.

*2.* plăid, băde, jăck, jăg, ălgebra, măltreat, ălbite, ădder, chăp, ădage, ălternate, tăssel, ăccident, tălc, serăglio, guărantee.

*3.* năional, răional, sălmon, stămp, pătriotic, hălf-penny, răillery, răspberry, păssage, vălet, pănsy, rădices, exăct, plăt, wăx, strănd, Isaac.

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**3.** Long before R, â = ê = *ai* = *ea* = *ei* = *hei* = a simple element, with possibly the initial in ā, but without any vanish.

Or, better by far, â may be regarded as a modification of ĕ-*nd*, by which it is to be understood that, with the vocal organs placed so as to utter ĕ, the sound of ā be attempted, steadily holding the organs the while rigidly for ĕ as far as possible, taking special care

that there be no vanish, or different sound, heard at the close of the utterance.

This tone is a distinct one, neither ā, nor ă, and should be mastered by practice; it is not a sound modified by *r*, although followed by it.

The extremes to be studiously avoided are ā and ă; properly uttered, it is a firm and pleasant tone.

The tone is a long sound, capable of being continued without destroying its quality.

FOR PRACTICE.

*1.* bâre, fâre, shâre, hâir, câre, châir, nê'er, stâre, glâre, stâir, mâre, châry, lâir, lâird, hâre.

*2.* whêre, hêir, râre, thêre, spâre, prâyer, ê'er, squâre, swêâr, bârely, châre, awâre, beâr, âir, flâre.

*3.* hârelip, solitâire, solidâre, thêir, peâr, pâir, teâr, târe, pârent, fâiry, êre, stâring, pâring, insnâre, blâre, dâring, weâr, scâre, pâre, dâre, scârce.

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**4.** Italian ä = *au* = *ua* = *ea* = *al* = *e* = ***ah*** = a simple element usually so regarded.

## CONSONANTS.

SUBVOCAL (SUBTONIC) AND ASPIRATE (ATONIC) ELEMENTS.

NOTE. — All subtonics have "a momentary terminative portion of the subtonic sound," called the vocule; it approaches ẽ-*rr*.

**35.** B = *be* = a simple element, subvocal, short, explosive. To make the sound: Close the lips and separate the jaws as if to pronounce the word b-*oy*; close the back nostrils with the soft palate; then allow the vocalized breath to compress itself within the mouth, until the lips are suddenly forced apart by the compression.

All vocality ceases instantly at the separating of the lips.

FOR PRACTICE.

*1.* boy, babe, bay, boil.

*2.* bat, bite, bit, bank.

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**36.** Ç (*soft*) = *s* = a simple element; aspirate, capable of being continued, yet should be very short.

It is made by bringing into contact, or very nearly so, the front teeth only; open the lips, draw back from the front teeth the end of the tongue as if to pronounce the words ç-*ent*, s-*un*, and emit between the tongue and teeth or upper gum the unvocal breath only.

FOR PRACTICE.

*1.* çite, song, çion, sing.
*2.* nieçe, çipher, sell, çentury.

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**37.** € (*hard*) = ₵h = *k* = (*qu* = $\widehat{k+w}$) = *ck* = *gh* = *qu* = a simple element; aspirate, abrupt, short, percussive.

To make the sound: Open the mouth as if to pronounce the word ₵-*at*, holding the unvocal breath abruptly stopped at the larynx, or upper windpipe, compressing the breath the while within the windpipe and lungs; then allow the compressed breath to escape suddenly and forcibly through the mouth, but without vocality.

FOR PRACTICE.

*1.* ₵horus, kind, tale, pienie, king, liquor,
*2.* li₵hen, ₵all, lick, bu₵hu, hough.

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| 44 | **39** | çh (*soft*) = sh ( = No. 60)...çhaise, shun. |
| 44 | **40** | ҫh (*hard*)=k=ҫ(=Nos. 47, 37)... ҫhorus, kine, ҫat. |
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| 50 | **52** | n̲=ng (=No. 51)...in̲k, sing. |
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| 51 | **54** | ph=f (=No. 42)...phantom, fan. |
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| 54–55 | **60** | sh=çh (=No. 39)...shun, çhaise. |
| 55 | **61** | t...tent. |
| 56 | **62** | th (*sharp*)...thin. |
| 56 | **63** | t̲h̲ (*flat* or *vocal*)...t̲hy. |
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| 57 | **65** | w=o͞o (*very short*) (*nearly*)...wīnd. |
| 58 | **66** | wh=h͡+w...what. |
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| 58 | **68** | x̱ (*soft*)=g͡+z...ex̱ist. |
| 59 | **69** | y...you. |
| 59 | **70** | z=ş (=No. 59) = zh...zone, haş, zho. |
| 59–60 | **71** | z=zh (=No. 72)...azure. |
| 60 | **72** | zh=z (=No. 71)...azure. |

# SPELLING.

## INTRODUCTION.

It cannot be denied that the orthography of the English language is a difficult one. In a general way there are no principles governing it; but a very few rules can be called to mind and these have so many exceptions that we are uncertain about orthography.

There are only three rules that I have found of practical value:

1. "Monosyllables and words accented on the last syllable, ending in a single consonant, preceded by a single vowel, double the final consonant before an addition beginning with a vowel."

2. "The diphthong 'ei' usually follows 'c,' while its companion 'ie' is generally used after other consonants."

3. Words ending in final "y," preceded by a vowel form their plurals by adding "s." It will be seen at once that English spelling must be learned to a great extent arbitrarily; but a little industry and attention will enable any student to master it.

### Results Unsatisfactory.

Everybody knows how imperfectly spelling accomplishes its purpose; there is no reason why any

student should habitually spell words badly. Any person may learn to spell.

No teacher of spelling is necessary or useful to persons who can read and write. If the student would learn to spell words let him use words. Let him write every day; and in writing, whenever he shall come to a word which he does not certainly know how to spell, let him look for it in his dictionary and study its spelling and meaning.

### Mechanical Spelling.

Too often the spelling is a mere "parrot exercise," in that its results are rapidly lost as soon as the attention is given to something else. Inattention is a fruitful source of ill spelling. Time is wasted upon oral spelling, and bad habits are formed by spelling new words pupils do not understand.

### Combination of Spelling.

I should connect spelling and reading with writing from the very outset. As soon as the child can pronounce the alphabet on this plan he will be able to write it, and then as he advances he must continue to write all the spelling lessons and as much of the reading lessons as time will admit. It is a rare thing to find children seven years old able to read a word of manuscript,—much less to write well. A little instruction given by the teacher each day upon this special study, will make the children good penman in a few week's time. This is not an impossibility—teachers, try it. It is a very valuable help.

During the past year I have pronounced the following words to twenty-one Institutes in the State of New York, viz:

| | | |
|---|---|---|
| accordion, | melodeon, | alpaca, |
| beefsteak, | billiards, | caterpillar, |
| diphtheria, | harelip, | surcingle, |
| occurrence, | inflammatory, | succotash, |
| tranquillity, | exaggerate, | vaccinate, |
| centennial, | brilliancy, | collision, |
| dissipate, | tyrannical, | valleys, |
| lilies, | numskull, | primer, |
| | erysipelas. | |

The average spelling of the teachers, including public school, union school, academy and normal school teachers is sixty-three per cent. One county stood at eighty-five per cent, and one at twenty per cent. Only three teachers from the twenty-one counties spelling all the words correctly.

The following list has been given at institutes, with similar results:

Judgment, infringement, abridgment,, acknowledgment, tranquillity, dissyllable, bilious, lilies, eying, vying, halos, inseparable, privilege, licentiate, conscientious, intercede, supersede, sacrilegious, inflammation, quizzical, contrariwise, mucilage, millenium, metallic.

**Oral Spelling.**

*I. Directions.*

1. *Require the pupil to pronounce the—*
   (a) *Word accurately before spelling.*
   (b) *Letters accurately.*

(c) *Syllables accurately.*

(d) *Word accurately after spelling.*

(e) *Words of the succeeding lesson accurately before study.*

(f) *Require the pupil to name every thing necessary to the correct writing or printing of the word, as the capital letter, hyphen, apostrophe, etc.*

(g) *Require the pupils to copy the words of the succeeding lesson several times before spelling.*

2. *Let every fifth exercise be a review.*

3. *Require misspelled words to be written correctly.*

4. *Review often and advance slowly.*

*II. Cautions.*

1. *The teacher should—*

(a) *Pronounce the word only once.*

(b) *Never repeat a syllable.*

(c) *Not permit the pupil to repeat a syllable.*

(d) *Require pupils to divide one syllable from another by a pause.*

(e) *Give no undue emphasis on unaccented syllables.*

(f) *Not permit the pupil to try the second time on a word.*

(g) *Explain new words.*

*III. Results.*

1. The correct spelling of words.
2. The correct pronunciation of words.

REMARKS.—In teaching Spelling, the instructor should aim to give interest to the exercise by frequently varying the mode of recitation. But whatever course is pursued, the following directions should be strictly adhered to :

*a.* That the word should be pronounced distinctly; just as it would be pronounced by a good reader or a good speaker. In giving out the words to a class, teachers sometimes commit the error of parting from the ordinary pronounciation, for the sake of indicating the orthography. No *undue emphasis* or *prolongation* of the utterance of a syllable should be given by the teacher.

*b.* That the pupil should spell once only on a word; as all beyond will be merely guessing.

For employment between recitations the children should be permitted and encouraged, and required and compelled, to write all the exercises they read or spell upon their slates.

**Importance of Written Spelling.**

The best way to study a spelling lesson is to require the pupils to write it several times on their slates. The practice of requiring pupils to study the lesson

a given number of times, only teaches them to hurry over their study, and not to study to any purpose.

It is not the number of times a lesson has been studied that should be considered the mark of effort, but the ability to spell every word in the lesson.

### Importance of Teaching Writing.

There is no reason why every child in every school should not be a good penman at a very early age.

The advantage of this acquisition to the children cannot be overrated; for, besides the mechanical skill, the child has the means of constant employment which will keep him from idleness and mischief, and the *live teacher* can make this skill bear upon almost every exercise in other branches of instruction.

### Written Spelling.

*I. Directions.*

1. Preparation for the lesson.
   (*a*) Pronounce the word accurately.
   (*b*) Use it in the construction of a sentence.
   (*c*) Define it.
   (*d*) Write a sentence containing it.
2. Materials—Book, pen and ink.
3. Require the pupils to write the word neatly, as soon as pronounced.
4. At the close of the written exercise, the teacher, or some pupil, should spell the word orally.
5. The pupil should check the misspelled words.
6. Every misspelled word, and word omitted, should be written correctly in the Appendix, with its number and the number of the column.

7. All blanks, letters or words erased, inserted, written over, or written indistinctly, should be considered as errors.

8. The teacher should examine the pupil's work, and keep a record of the scholarship.

9. Begin all words with small letters, except proper names.

*II. Cautions.*

1. The teacher should give sufficient time to the exercise.

2. The direction number eight must be adhered to strictly ; any violation will be counted the same as a misspelled word.

3. If words are found unchecked, they should be marked with a cipher.

4. Every word which the student checks for himself will deduct one ; every word checked with a cipher will deduct five ; any correction whatever made in the column will deduct ten.

REMARKS.—"The old adage, 'Eyes are better than ears,' nowhere holds good with greater force than in learning to spell." Familiarity with words as written, such as will give the knowledge of all the letters and their proper position, is necessary to the power of writing them correctly. Such familiarity is obtained only from frequently seeing or writing them. The only way to produce words accurately is to make them familiar to the eye; hence the well-known fact that persons who read much, as compositors, or write much, as copyists, invariably spell correctly ; hence also the common practice, when people are in doubt

between two forms of words, to write them both, when the eye instantly decides on the right thing.

### Value of Oral Spelling.

Spelling is the right formation of words with their proper letters. Spelling is either oral or written. Oral spelling does not give the ability to write words correctly ; but it must not from this fact be deemed a useless exercise. Long used as a basis of learning to read, and still clung to by many, notwithstanding the discovery of a better method, there must be something in it. It has already been shown that its special claim of giving the learner the powers of the letters, so that he may pronounce new words for himself cannot be allowed. What it did do, was to make familiar to the ear words that otherwise would have been altogether strange, and sufficiently distinguishable by the eye to enable the learner to recognize them again when met with in his reading lessons. Other reasons may be assigned for the tenacity with which the old practice of setting spelling lessons has been clung to. It found favor with parents as furnishing some school work at home. And it found favor with teachers, as giving the only means with the younger children, or with the very poor, of forming those habits of attention, application, perseverance and retention which are the characteristic features of a system of tasks.

### Discovery of Mistakes.

The detection of every mistake with least loss of time is of the first importance. Careful examination

of each slate by the teacher is most likely to secure this, but it is open to the fatal objection that it occupies much time and leaves the class idle. In some schools monitors are appointed to examine the slates and to correct the mistakes. This, apart from the difficulty of getting properly qualified monitors, is objectionable, as yielding the monitors no adequate return for their long and irksome task, to which must be added the possibility of unfaithfulness. The plan of allowing the children to inspect each other's slates is open to serious objections, not the least of which is the distrust it seems to imply. Sometimes the children compare their slates with the lesson in the book, or written on the black-board: a plan which has the advantages of throwing the labor on the child, and of having the corrections made at the same time, all that is needed being a vigilant oversight, to see that it is faithfully done. But the method which to our mind is the best, is to dictate but one or two sentences, and then to have each sentence spelled through, either by the teachers or by the scholars in turn, every mistake being underlined.

### Corrections.

The correction of mistakes should appeal to the eye, not to the ear. Pains should be taken to ascertain the cause of any common defect. For this purpose the word should be written on the black-board, and alongside of it the correct form; the two should be compared, and the cause of the mistake discovered. Often this will be a lesson on the structure of a class of words, and probably prevent similar mis-

takes afterwards. After this has been done, the whole class should write the word in its correct form, and then the words should be dictated afresh; if any now have mistakes, they should be required to write the words three or six times, according to the degree of carelessness shown. Sometimes it may be well to direct the children themselves to write correctly the words they have underlined, this making them attentive while the words are being spelled. But, as a general thing, this is open to the objection that it appeals to the eye, and that it does not occupy the children who have spelled all correctly.

### Methods in Spelling.

*I. Constructive Method.*

1. The teacher should request the pupils :—
   (*a*) To name a few familiar words.
   (*b*) To construct with block or card letters.
   (*c*) To spell the words by the sound of the letters.
   (*d*) To copy the words on their slates.
   (*e*) To tell the silent letters.
   (*f*) To spell the words by the name of the letters.
   (*g*) To use each word correctly in a sentence.

*II. Objective Method.*

1. The teacher should request the pupils :—
   (*a*) To bring to school a number of objects of the same kind.
   (*b*) To examine them carefully.
   (*c*) To name the parts.
   (*d*) To spell and write the words.
   (*e*) To tell the uses of the parts.

(*f*) To introduce the word into a sentence.

(*g*) To name the properties of the parts.

(*h*) To write a short composition, reproducing the words.

**General Plan.**

I. Object.
II. General properties.
III. Parts.
IV. Properties of parts.
V. Uses of parts.
VI. General uses.

**Different Methods of Spelling.**

*First Method.*

Spelling and defining.

1. Assign an object to every pupil.
2. Pupils find the meaning.
3. Pupils name the parts, qualities, uses, etc.
4. Write a short composition, reproducing the words.

*Second Method.*

1. Teacher write a certain number of words on the board, requiring the pupils to copy.
2. The pupils learn to define them.
3. The pupils use them in composition of a sentence.

*Third Method.*

1. Require the pupils to spell the names of :—
   (*a*) Countries.
   (*b*) States.
   (*c*) Counties.
   (*d*) Cities.

(*e*) Towns.
(*f*) Divisions of Land.
(*g*) Divisions of Water.
(*h*) Classes of Objects.
(*i*) Occupations.
(*j*) Animals, Minerals, etc.
(*k*) Trees.
(*l*) Fruits.
(*m*) Flowers.
(*n*) Vegetables.

*Fourth Method.—Dictation.*

1. The teacher should have a Dictation Exercise once a week.
2. Dictate complete statements to the pupils.

*I. The Direction of the above Exercise.*

1. Write your full name on the paper; punctuate it.
2. Number the sentences.
3. Construct every letter accurately.
4. No erasures of letters or words.
5. No insertion of letters or words.
6. No writing over of letters or words.
7. No prompting
8. Use capital letters correctly.
9. Use punctuation marks correctly.
10. Cross the "t's" and dot the "i's."

(*a*) Teacher or pupil write the correct form on the board.

(*b*) Those who make mistakes in spelling, or in any of the directions, should be required to correct them.

(*c*) Teacher should carefutly examine the papers.

(*d*) Find the per cent.

Remarks.—However thorough the drill in spelling may be from the lessons of the speller and reader, every teacher should have frequent and copious exercises in spelling words from other sources. These should be words in common use, chosen as far as possible from the range of the pupil's observation, including the new words that arise in object lessons, in geography, arithmetic and grammar. The more difficult of these words should be wrttten in columns on the board, and studied and reviewed with the same care as lessons from the speller and reader. Failures in spelling these words should be marked as errors, the same as failures in any other lessons.

### Various Modes of Conducting Exercises in Spelling.

1. Read a short sentence distinctly, and require every word to be spelled by the class,—the first pupil pronouncing and spelling the first word, the next pupil the second, and so on until all the words in the sentence have been spelled. (An excellent exercise ; it demands attention.)

2. It will be well in oral spelling to make all the members of the class responsible for the accurate spelling of each and every word.

If the first member of the class misspells the word given to him, let the teacher proceed and give out the next word, without intimating whether the first word was correctly or incorrectly spelled.

If the second pupil thinks the first word was not

spelled correctly, he will spell it instead of the one given to him, and so on through the class, each being expected to correct any error that may have been committed. If the first pupil spells a word incorrectly, and no one corrects it, let all be charged with a failure. This mode will amply compensate for its frequent adoption.

**Require Study on the Difficult Words.**

Two-thirds of the words in the English language need but little study. The remainder can be mastered only by study. The pupils should be urged to study the difficult words.

3. Another mode of conducting the exercise of spelling is the following, and we may add that for more advanced schools it possesses some advantages:

Let the teacher write legibly on the board twenty or more difficult words, and allow them to remain long enough to be carefully studied by the school. A few minutes before the exercise let all the words be erased from the board. Let each pupil provide himself with a slip of paper, following the order as directed in the previous exercises. The teacher will pronounce the words and the pupils will write them.

After the words have been written, let the slips be collected and taken by the teacher, who may himself—aided by some of the pupils—examine the slips, and mark the words spelled incorrectly. Subsequently, let the teacher read the result to the whole school, stating the number of errors committed by the several pupils; after which the papers may be returned for correction. If there is a good board in the room, a few pupils should write the lesson on it.

4. An attractive mode, which may answer for oral or written spelling, is the following :

The instructor pronounces a word which is to be spelled by the first in the class, who will name immediately another, commencing with the final letter of the first word which is to be spelled by the next pupil ; and he in turn will name another word, and so on through the class. It will awaken thought and interest.

5. Another mode which has its advantages is the following :

Let the teacher dictate some twenty or twenty-five words to the class, requiring the members to write them on their slates. These words are to be carefully examined and studied by the pupils, who are also to be required to incorporate each word in a sentence, which shall illustrate its meaning and show that it is understood by them.

After these sentences have been read and erased from the slates, let the words be dictated again, to be written and examined with special reference to the orthography.

The teacher should keep a copy of all words dictated to the pupils and hold them responsible for the correct spelling in review.

### Importance of Spelling.

Teachers should give close attention to this important subject, for truly it has been said, " To spell one's own language well is no great credit to him for he ought to do it ; but to spell it ill is a disgrace, because it indicates extremely poor attention and loose

scholarship." We have a great number of spelling-books, grammars, and other aids, but with all these, poor spellers greatly abound.

One cause of the frequency of poor spelling may be found in the neglect with which the spelling lesson is treated in schools. It is often crowded into a few minutes and passed over in a very hurried and imperfect manner, and if any exercise must be omitted the spelling lesson is the neglected one. Another cause may be found in a feeling, not very uncommon, that spelling is undeserving the attention of any but very young pupils.

From the beginning let your pupils understand that the spelling lesson will always receive its due share of atention, and its due time. Hold your pupils responsible for the correct spelling of *every word* at the regular recitation and upon reviews.

As soon as the pupils can write, which, in a well-conducted school, is about as soon as they can read, special instruction in spelling with script letters should be introduced, and children should be required to write and to spell orally every word in their reading, and in all other lessons. If accuracy and neatness in every particular be required, habits of careful attention will be formed.

The child must be taught to spell correctly, before twelve years old, as this habit is seldom acquired after that age.

**Spelling Used only in Printing and Writing.**

A good speller is one who habitually gives the correct form to every word in his written exercises.

It is only in printed and written language that correct spelling possesses any value. Oral spelling is not a test of accuracy. It is impossible to memorize by their letters all the words in our language. If we wish to make pupils excellent spellers, we must cultivate the powers of observation and memory. If habits of carelessness and inaccuracy are allowed to be formed in childhood, no ordinary efforts in after life can overcome the defects or supply the deficiencies that result from such bad habits.

### General Rules for Spelling.

*Rule* 1. Write no word unless sure of its orthography and signification.

*Rule* 2. Consult the dictionary in case of doubt.

*Rule* 3. Apply the rules for derivatives.

REMARKS.—Rules for spelling are of but little use in primary classes, or in fact in any classes. It may be well to memorize them, as they may prove of a little use in spelling of derivatives.

### Exercise in Orthoepy

1. sacrifice,
2. memoriter,
3. pedagogy,
4. equable,
5. truths,
6. torrid,
7. often,
8. pretty,
9. finance,
10. mercy.

### Exercise in Orthoepy, with Diacritical Marks.

1. săc′rĭfīce,
2. mêmŏr′iter,
3. pĕd′agōgy,
4. ē′quable,
5. truths,
6. tŏr′ĭd,
7. ŏf′ten,
8. pret′ty,
9. fĭnănçé,
10. mer′cy.

NOTE.—The teacher should write these words on the board, and let the pupils pronounce them.

**Exercise in Orthoepy.**

1. finale,
2. apparatus,
3. orotund,
4. jugular,
5. enervate,
6. inquiry,
7. employe,
8. condolence,
9. dessert,
10. pronunciation.

**Same Words with Diacritical Marks**

1. fĭnä′le,
2. ăppărā′tus,
3. ō′rōtund,
4. jū′gular,
5. ēnēr′vate,
6. ĭnquī′ry,
7. ĕmployé′,
8. condō′lence,
9. dĕssērt′,
10. pronuncia′tion.

**Exercises in Orthoepy.**

1. aye
2. area,
3. almond,
4. alias,
5. arctic,
6. acclimate,
7. apparent,
8. aspirant,
9. allopathy,
10. albumen.

**Same Words with Diacritical Marks.**

1. ā′ye,
2. ā′rea,
3. ä′lmond,
4. ā′lĭas,
5. Arc′tic,
6. ăcclī′māte,
7. ăppâr′ent,
8. ăspĭr′ant,
9. ăllŏp′athy,
10. ălbu′men.

**Exercise in Orthoepy.**

1. Appālāchian,
2. Am′azon,
3. New Or′leans,
4. New′foŭndland,
5. Shawan′gunk,
6. Colorādo,
7. Cōhō′es,
8. Virgi′nia,
9. Arkan′sas,
10. Ausa′ble.

Remarks —"Exactness in articulation cannot exist without close discrimination and careful analysis." The preceding exercises on the correct pronunciation of words should receive attention. It would be well for the teacher to write on the board a list of words pronounced incorrectly by the pupils, and require the pupils to correct them.

Inquiries are made so frequently about books for written spelling that it is thought best to give the names of some of the books and publishers. Any of them may be obtained of Davis, Bardeen & Co., Syracuse, N. Y.

Patterson's Exercise Book—Small 25 cts., large 50 cts.; Sheldon & Co, New York.

Sherwood's Written Speller—12 cts.; George Sherwood & Co., Chicago, Ill.

The Bulletin Blank Speller, prepared by Henry B. Buckham, Principal Buffalo State Normal School—15 cts. each, $10.00 per hundred; Davis, Bardeen & Co., Syracuse, N. Y.

# PENMANSHIP.

## INTRODUCTION

But little need be said on this subject, for the reason that the authors of the various systems of penmanship have placed before the public "Hand-Books" on the subject, so that teachers may qualify themselves to teach it. A moment's reflection will suffice to convince any one of the importance of this art; it is intimately connected with all the commercial and social relations of life.

When we reflect that a brief practice, a few months at the farthest, under a competent instructor, will enable even a child to command and use this noted instrument, I would ask, is it not a shame that pupils frequently leave school at the age of twelve years unable to write even a tolerable hand? Writing is virtually ignored as a branch of study in a majority of our common schools. It should not be placed in the background: rather in the foreground of our educational work. Writing is the complement of Drawing, and both these are complements of Reading. In our best schools pupils are taught to write the first year.

Writing, as a medium for communicating thought, is almost as important as speaking. Scrawls that

cannot be read may be compared to talking that can not be understood. If the teachers would attain excellence in Penmanship they must master the principles and faithfully practise them. Writing cannot be thoroughly taught by imitation; it must be made a study for a few months' time, and then all the difficulties will be removed. We have seen hundreds of teachers who could not tell what kind of lines were used in making the letter "n." Good penmanship should be exacted as a qualification of our public school teachers.

As a general rule teachers dislike to teach writing because they do not know how. Let the teachers of our public schools learn to write and at the same time learn to teach the art. Children like to write, never need urging when the instruction is imparted profitably and correctly. One year at school with the qualified teacher would enable every pupil to write a plain hand We hope the brief instruction on this subject will pay good interest on the time expended on its study.

**Penmanship.**

I. Position. -
1. Left side.
2. Front.
3. Right oblique.
4. Right side.

II. Movement.
1. Finger.
2. Fore-arm.
3. Combined.
4. Whole-arm.

III. Lines.
1. Base-line.
2. Head-line.
3. Intermediate-line.
4. Top-line.

IV. Slant.
1. Main-slant.
2. Connective-slant.

V. Space.
1. Height.
2 Width.
3 Length.

VI. Construction.
1. Slants.
1 Main.
2. Connective
1. Right curve.
2. Left curve.
2. Angles.
(*a*) Lower.
(*b*) Upper.
3. Turns.
(*a*) Lower.
(*b*) Upper.

VII. Form.
1. Small.
1. Short, (thirteen,)
2 Semi-extended, (four.)
3. Extended or loop, (nine)
2. Capital.— Three Classes.

VIII. Principles.
1. Straight line.
2. Right curve.
3. Left curve.
4. Extended loop.
5. Direct oval.
6. Reversed oval.
7. Capital stem.

IX. Spacing.
1. Between letters, one and one-fourth spaces; except *a*, *d*, *g* and *q*, two spaces.
2. Between words, one and one-half spaces.
3. Between sentences, two spaces.

X. Counting.
1. Count *one* on the first stroke, *two* on the second, and so on, until the last stroke; then repeat *one*.
2. Count *one* on the combination; and *one* at the end of a word.
3. In writing a copy, pronounce the word before counting.

XI. Shading. Five different forms.

XII. Requisites.
1. Good teaching.
2. Good copy.
3. Good desk.
4. Good paper.
5. Good pens.
6. Good pen-holders.
7. Good ink.
8. Blotter.
9. Pen-wiper.
10. Practice paper.
11. Blackboard.
12. Covers.

XIII. Opening.
1. Position.
2. Adjust book.
3. Find copy.
4. Adjust arms.
5. Open inkstand.
6. Take pens.
7. Take ink.
8. Ready.
9. Write.
10. Count.

XIV. Closing.
1. Wipe pens.
2. Pass pens.
3. Position.
4. Close inkstand.
5. Pass pen-wiper.
6. Close books.
7. Pass books.
8. Position.

**Penmanship.**

*I. Directions.*

1. Construct and illustrate the letters on the board.
2. Give instruction and practice on individual letters.
3. Teach writing as a simultaneous exercise.
4. Require the pupils to—
   (*a*) Analyze the letters ; first, in concert, with the elements ; second, with the principles.
   (*b*) Analyze the letters with precise language before execution.
   (*c*) Write slowly in the beginning.
   (*d*) Write on the board daily.
   (*e*) Write without lifting the pen from the paper.
   (*f*) Write with the slate-pencil in the beginning. Pass an oral examination weekly ; written examination monthly.

*II. Cautions.*

1. Teach and train the pupils *to know.*
2. Teach and train the pupils *to execute.*
3. Teach and train the pupils *to criticise.*
4. Teach and train the pupils *to correct.*

*III. Results.*

1. Legibility. - { 1. Accuracy. 2. Symmetry. 3. Uniformity. 4. Neatness.
2. Beauty.
3. Rapidity.

**Position.**

The position of the body is of great importance to correctness and freedom of execution. We should first teach the correct position of the body, arms, hands and feet, and absolutely insist that every pupil shall sit in this manner unless prevented by some physical deformity. Teachers sometimes make a great mistake; they show the proper position but neglect to insist upon it.

Whatever the position, the pupils should learn to sit easily upright and keep the shoulders square.

*Left Position.*

Sit with the left side making an angle of forty-five degrees with the desk; place the book nearly square with the desk a little to the right of the body.

This position is the most favorable for writing on large books.

*Front Position*

Sit directly facing the desk, near to it, with the feet level on the floor, and the fore-arms resting slightly on the desk in front, at right angles to each other. The right arm should rest lightly on the edge of the desk, on the muscles below the elbow. Adjust the book so that the right arm will be at right angles to the lines on which you are to write.

*Right-Oblique.*

The Right-Oblique position varies from the full right position in having the right side but partially turned toward the desk, and the arms and book placed obliquely on the desk.

*Right Position.*

Turn the right side near to the desk but not in contact with it; keep the body erect, the feet level on the floor; place the right arm parallel to the edge of the desk, resting on the muscle just forward of the elbow. Let the left hand be at right angles to the right and resting on the book, keeping it parallel with the edge of the book.

**Movement.**

In writing, the instruments used are the pen-fingers, the fore-arm and the whole arm movements. A free, easy movement produces a graceful line, while a stiff, cramped one produces a rough, irregular line. The training of the muscles of the arm and hand must be attended to by the teacher. In the first attempts at writing, the muscles may not properly perform what the mind directs; but by frequent and careful practice they are rendered obedient to the will. So important is this training that some authors institute tracing exercises to educate the hand to regular movements.

**Finger Movement.**

This movement is made by the extension and retraction of the pen-fingers and the thumb, and it is

chiefly used in making the upward and downward strokes. It is used mainly in making single letters. This movement and its exact position should be carefully taught.

**Fore-Arm Movement.**

This movement is made by resting the arm on the muscles below the elbow,—that is, the muscles below the elbow are used as the centre of motion, giving a lateral movement. It may be employed in making strokes in any direction.

**Combined Movement.**

This movement consists in the united action of the fore-arm, hand and fingers, the fore-arm acting on its muscular rest as a centre. This movement answers the requirements of business use better than any other.

**Whole-Arm Movement.**

The whole-arm movement consists in the use of the whole-arm from the shoulder, the elbow being raised slightly from the desk. This movement is mainly used for striking large capitals. For practice it is highly beneficial, giving steadiness and ease to the movement.

**Lines.**

Writing is the complement of Drawing. It is supposed that instruction has been given upon simple geometrical lines.

**Base Line.**

The horizontal line on which the writing rests, is called the *Base Line.*

### Head Line.

The horizontal line to which the small letter extend, is called the *Head Line.*

### Intermediate Line.

The horizontal line to which the semi-extended letters reach, is called the *Intermediate Line.*

### Top Line.

The horizontal line to which the loop or extended letters extend, is called the *Top Line.*

### Slants.

A straight line standing to the right of a vertical, forming an angle of 52 degrees with the horizontal, gives the *Main Slant.*

### Connective Slants.

Curves which connect straight lines in small letters are made on an angle of 30 degrees, and called the *Connective Slant.*

### Space.

#### *Height.*

The unit for measuring the height of letters is the small letter "*i*" without the dot, both for small and capital letters, and is called a space.

#### *Width.*

The unit for measuring the width of letters is the distance between the two slanting straight lines in the small letter "*u*" taken horizontally, and is called a space.

*Length.*

The length of the letter, taking "*i*" for the standard, is a trifle greater than the width.

**Construction.**

The construction of a letter is to tell the height, width, angles, turns and slant.

*Angles.*

The angle is formed by a straight line meeting a curved line.

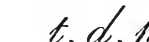
*Turns.*

The turn is formed by a curve line meeting a straight line ; it should be made as short as possible, without making an angle.

*Form*—(*Small Letters.*)

The short letters are—

The semi-extended letters are—

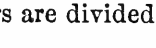


The extended or loop letters are—

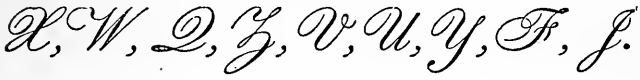
*Capital Letters.*

Capital letters are divided into three classes:

First class—



Second class—



Third class—

*Principles.*

1. A straight line on the main slant, is the *First Principle.*

2. A right curve, usually on the connective slant, is the *Second Principle.*

3. A left curve, usually on the connective slant, is the *Third Principle,*

4. A loop upon the main slant, is the *Fourth Principle.*

5. A direct oval or capital O, is the *Fifth Principle.*

6. A reversed oval upon the main slant, is the *Sixth Principle.*

7. The capital stem is the *Seventh Principle.*

**Spacing.**

The spacing should be carefully watched in writing ; nothing adds more beauty to writing than uniform and correct spacing.

**Counting.**

To keep the members of the class together and produce a steady and uniform movement, it is necessary to apply time to the movements of the pen

in writing. Some pupils move too rapidly, without taking pains to make the letters; others move too slowly, with an irregular, tremulous motion. The best results have been attained by counting; we believe it to be the best and only way to teach pupils to write in a body. Directions are given in the tabulation.

**Shading**

This adds beauty to the writing, but it should be used very sparingly. Capital letters should be used very sparingly. Capital letters should be shaded, but it is not necessary to shade small letters.

**Requisites.**

In order to progress, pupils should be supplied with good materials. Nothing is gained by placing in children's hands poor materials. The blackboard should be used in every exercise.

**Opening.**

The same order and system should prevail in the exercises in writing as in any other, and all the pupils should be required to write during the exercise; for any deficiency they should be instructed that it must be made up, the same as in any other recitation.

Seldom do we see the whole school engaged in the writing exercise. Open and close the exercise carefully; have a system.

General Remarks.—The pupils on their first entrance into the school-room, should be supplied with a slate ruled on one side: if not ruled the teacher should rule it The slate pencil should be long.

Instruction should be given on *Lines* the first day, and the teacher should place the lines on the board and require the pupils to copy. After they retire to their seats, they should be requested to reproduce the work. This will give them employment, and lead to the mastery of penmanship in a very few months. Pupils should first be taught to make all the letters on their slates, and after they can make them readily they may then use the lead pencil and paper. Pen and ink should not be placed in their hands until they can make all the letters, both small and capital, readily and perfectly.

All the exercises of the school require more or less writing, and the teacher should begin it at an early day. Some teach pupils to print at first; while I do not think this to be the correct way, yet good results have been attained. Pupils can be taught to form the script characters as early as the printed.

In the schools of Columbus, Ohio, St. Louis, Mo., New York and Brooklyn, and many other cities, the pupils are taught to write the first year. They have attained the most satisfactory results in spelling and in reading through the teaching of penmanship. We know from experience in the school room that children under eight years of age can be made good penmen in one year's time. We would encourage teachers to try it; if at the end of the year you have not succeeded, *blame yourself.*

**Analysis of a Letter.**

*i.—The letter "i" is one space in height*

*and two spaces in width, composed of the right curve, main slant, and the right curve.*

REMARKS.—The analysis above is all that is necessary at first, but a fuller one may be given after they understand the parts, as follows:

*i.—The letter "i" is one space in height and two spaces in width, composed of the right curve, upper angle, main slant, lower turn, and the right curve.*

Also it may be analyzed by principles, viz:

*i.—The letter "i" is composed of the second principle, first principle, and the second principle.*

**List of Manuals on Penmanship.**

Key to Spencerian Penmanship—$1.50; Compendium of do., $1.75; Theory of do., 25 cts.; Ivison, Blakeman, Taylor & Co., New York.

Manual of Penmanship—$1.25; Potter, Ainsworth & Co., New York.

Hand-Book of Penmanship—50 cts; VanAntwerp, Bragg & Co., Cincinnati.

# DRAWING.

## INTRODUCTION.

How it ever came to pass that arithmetic should be taught to the extent attained in the public schools of the civilizd world, while geometry is almost wholly excluded from them, is a problem from which the author of this manual has often sought a solution, but with only this result, viz.: that arithmetic, being considered an elementary branch, is included in all systems of instruction; but, geometry, being regarded as a higher branch is reserved for systems of advanced education, and is, on that account, reached by but very few of the many who need it.

The error here is fundamental. Instead of teaching the elements of all branches, we teach elementary branches much too exhaustively. The elements of Geometry are much easier to learn, and are of more value when learned, than advanced Arithmetic; and, if A is to leave the school with merely a common school education, he would be much better prepared for the active duties of life with a *little* Arithmetic and *some* Geometry, than with *more* Arithmetic and *no* Geometry.

Unthinking persons frequently assert that young

children are incapable of reasoning, and that the truths of Geometry are too abstract in their nature to be apprehended by them.

To these objections, it may be answered, that any ordinary child, five years of age, can deduce the conclusion of a syllogism if he understands the terms contained in the propositions ; and that nothing can be more palapable to the mind of a child than forms, magnitudes, and directions.

There are many teachers who imagine that the perceptive faculties of children should be cultivated *exclusively* in early youth, and that the reason should be addressed only at a later period.

It is certainly true that perception should receive a larger share of attention than the other faculties during the first school years ; but it is equally certain that no faculty can be safely disregarded, even for a time. The root does not attain maturity before the stem appears ; neither does the stem attain its growth before its branches come forth to give birth in turn to leaves ; but root, stem and leaves are found simultaneously in the youngest plant.

That the reason may be profitably addressed through the medium of geometry at as early an age as seven years is asserted by no less an authority than President Hill of Harvard College, who says, in the preface to his admirable little geometry, that a child seven years old may be taught geometry more easily than one of fifteen.

The author holds that this science should be taught in all primary and grammar schools, for the same

reasons that apply to all other branches. One of these reasons will be stated here, because it is not sufficiently recognized even by teachers. It is this :

The *prime* object of school instruction is to place in the hands of the pupil the means of continuing his studies without aid after he leaves school. The man who is not a student of some part of God's works cannot be said to live a rational life. It is the proper business of the school to do for each branch of science exactly what is done for reading.

Children are taught to read, not for the sake of what is contained in their readers, but that they may be able to read all through life, and thereby fulfil one or the requirements of civilized society. So, enough of each branch of science should be taught to enable the pupil to pursue it after leaving school.

If this view is correct, it is wrong to allow a pupil to reach the age of fourteen years without knowing even the alphabet of Geometry. He should be taught at least how to *read* it.

It certainly does seem probable, that if the youth who now leave school with so much Arithmetic, and no Geometry, were taught the first rudiments of the science, thousands of them would be lead to the study of the higher mathematics in their mature years, by reasons of those attractions of Geometry which Arithmetic does not possess.

The author would combine Geometry and Drawing, and make it purely a development exercise. But very little attention has been given to this subject in the schools of this country. It is one of the first

subjects that should receive attention in the primary classes. There is no subject that will produce such satisfactory results in so short a time as Drawing. It gives a good discipline to the mind, as it deals at first with geometrical terms, as lines, angles, circles, etc. It is an exercise well calculated to develop reason and judgment on the part of the pupils. The eye is trained to observe and compare objects; and the hand is trained to execute.

It should precede all the primary work in the school; should be taught before reading, spelling, writing numbers, etc. It is the complement of writing and map-drawing; it is a source of endless amusement and instruction. How much more quick and satisfactory is the process of delineating an object by drawing, than that of describing it by words. The requirement of this art necessitates also the right use of the faculties of sight, observation, imitativeness and even conception.

Precedence is always given to knowledge, and not to manual execution. The teacher who has at the end nothing to show but finely drawn lines, has given poor instruction. His class should be able to sustain a thorough examination, based on the principles of geometrical terms. It is expected that the teacher will thoroughly instruct the pupils in the methods of work, and in the definitions of terms, a thing that cannot be done without frequent review.

Elementary Drawing, when taught in a rational, systematic manner, is one of the easiest and one of the most delightful things to teach to children. Like

other studies it must be made compulsory, and not be left to the decision of the teacher and pupil. There must be examinations and promotions, as in other branches.

Satisfactory results in drawing are no more dependent upon special gifts on the part of pupils, than satisfactory results in arithmetic are dependent upon special mathematical gifts. It is only necessary that the pupils set about the study of drawing as they set about the study of arithmetic, geography or grammar.

**Elementary Definitions of Drawing.**

1. That which has position but no dimensions, is a Point.

2. That which has length, but neither breadth nor thickness, is a Line.

3. A line that does not change its direction at any point, is a Straight Line; it indicates the shortest distance between two points.

4. A line that changes its direction at every point, is a Curved Line.

5 A line that changes its direction at some of its points, is a Broken Line.

6. A straight line that points to the centre of the earth, is a Vertical Line

7. A straight line that points to the horizon, is a Horizontal Line.

8. A straight line that is neither vertical nor horizontal, is an Oblique Line.

9. A line that bends regularly, and if continued, would form the circumference of a circle, is a Simple Curve.

10. A line composed of two or more simple curves, is a Compound Curve.

11. A plane figure bounded by a compound curve struck from two centers, is an Ellipse.

12. A line that is regular in all its parts is a Regular Broken Line.

13. A line that is irregular in some of all of its parts, is an Irregular Broken Line.

14. Lines that extend in the same direction and whose opposite points are always the same distance from one another throughout their entire length, are Paralled Lines.

15. Lines where the points are connected are Continuous.

16. Lines where the points are disconnected are Discontinuous.

17. The difference in the direction of two straight lines, is an Angle.

18. An angle which is formed by the meeting of two straight lines perpendicular to each other, is a Right Angle.

19. An angle which is less than a right angle, is an Acute Angle.

20. An angle which is greater than a right angle, is an Obtuse Angle.

21. A plane figure having three sides, is a Triangle.

22. A triangle that has one right angle, is a Right-Angled Triangle.

23. A triangle that has one obtuse angle, is an Obtuse-Angled Triangle.

24. A triangle whose angles are all acute, is an Acute-Angled Triangle.

25. A triangle where the three sides are equal to each other, is an Equilateral Triangle.

26 A triangle where the three sides are of unequal length, is a Scalene Triangle.

27. A triangle where two of its sides are equal, is an Isosceles Triangle.

28. A plane figure having four sides, is a Quadrilateral.

29. A quadrilateral that has no two sides parallel, is a Trapezium.

30. A quadrilateral where only two sides are parallel, is a Trapezoid.

31. A quadrilateral whose opposite sides are parallel, is a Parallelogram.

32. A right-angled parallelogram, is a Rectangle.

33. A parallelogram whose opposite sides are equal but which has no right angles, is a Rhomboid.

34. A parallelogram with four equal sides, but the angles not right angles, is a Rhombus.

35. A figure having four equal sides and four right angles, is a Square, or an Equilateral Rectangle.

36. A figure that has four right angles, but only its opposite sides equal, is an Oblong.

37. A plane figure bounded by a curved line, every part of which is equally distant from a point within called its centre, is a Circle.

38. A straight line drawn from the centre to the circumference, is a Radius.

39. A straight line drawn through the centre and touching the circumference on both sides, is the Diameter.

40. Lines drawn from side to side, passing through the centre, are the Diameters of a Square.

41. Lines connecting the opposite angles of a square are called the Diagonals of a Square,

42. The straight line connecting the ends of a curve is the Base.

43. The perpendicular distance from the base to the highest point of the curve is the Altitude.

44. A straight line which touches the circumference of a circle at two points, but which is shorter than the diameter, is a Chord.

45. Any part of the circumference of a circle is an Arc.

**Geometry.—Elementary Exercise.**

*A. Point and Lines.*

I *Point.*

II. Line.
- 1. Straight.
  - a. Vertical.
  - b. Horizontal.
  - c. Oblique.
  - → Parallel.
- 2 Curved.
  - a. Simple.
  - b. Compound.
  - c. Elliptical.
  - → Continuous.
- 3. Broken
  - a. Regular.
  - b. Irregular.
  - → Discontinuous.

*B. Combination of Straight Lines.*

I. Angles.
- 1. Right.
- 2. Acute.
- 3. Obtuse.
- → Two lines.

II. Triangles.
- 1. Classified according to sides.
  - 1. Equilateral.
  - 2. Scalene.
  - 3. Isosceles.
- 2 Classified according to angles.
  - 1. Right-angled.
  - 2. Acute-angled.
  - 3. Obtuse-angled
- → Three lines.

| | | | | |
|---|---|---|---|---|
| III. Quadrilaterals. | 1. Trapezium. | | | |
| | 2. Trapezoid. | 1. Rectangle. | 1. Square. | Four lines. |
| | 3. Parol'og'ms. | 2. Rhomboid. | 2. Oblong. | |
| | | 3. Rhombus. | | |

All who produce good figures should be allowed to place them on the board. This will hint to others, and encourage all to do well enough to be allowed to draw on the board. Some of these figures the teacher gives to the class as dictation exercises, either in the present shape or modified. Figures should never be drawn less than an inch in size, and the pupil should take positions three or four feet away, to criticise his work. If the class is large, divide it into equal parts, and let one draw at the board each day, while the others draw on their slates.

The teacher needs to study a Manual on Drawing, in order to teach it thoroughly and successfully. Among others we would refer them to Krusi's Manuals of Drawing, Synthetic, Analytic and Perspective, 75 cts. each, published by D. Appleton & Co., New York; Smith's Manual, Primary $1.25, and Intermediate $2.50, published by L. Prang & Co., Boston; Bartholomew's Manual $1.25, published by Potter, Ainsworth & Co., New York; Mark's First Lessons in Geometry, 90 cts., published by Ivison, Blakeman, Taylor & Co., New York.

# PART 1: LANGUAGE.

## INTRODUCTORY

They who feel an inward *call* to teach and *enlighten* their countrymen, should deem it an important part of their *duty* to draw out the stores of thought which are already latent in their native language, to purify it from the corruptions which time brings upon all things, to endeavor to give distinctness and precision to whatever in it is confused, or obscure, or dimly seen.

We do not wish to condemn the study of grammar; *every teacher should understand it*, and pupils who are able to digest the science and assimilate the knowledge should be encouraged to study it. But we believe that a majority of pupils have formed a distaste for the study of grammar, because it was introduced at too early an age. Lessons in Language should receive *attention from the first;* but they should be free from all definitions, grammatical rules, analysis and parsing; these only clog the memory and signify nothing but mere notions of general terms.

Definitions and rules are results, and we should seek to attain these results by practical work through the study of the art of Language; then, and not

until then, shall we arrive at a knowledge of their character and an appreciation of their usefulness.

### The Object to Teach Pupils to Speak and Write Correctly.

The object of the study of grammar is "*To teach the art of correct expression and the science of language.*' The study of our text book on grammar, does not as a rule, attain these results. Why? Because grammar, proper, is the study of the science of language. Technical grammar belongs to the advanced course, and a majority of our pupils, who leave school before the age of twelve years, should pursue the study of language, which would be of use through life; whereas the study of grammar will be of but little, if any, use.

In Language we believe that the duty of preparing the soil, and planting the seed, is with the primary teacher. *Correct sentences* should *always* be used in the presence of the pupil; if the teacher be careful in this direction, in no case using incorrect language, the ear becomes accustomed to forms of expression, and the child will unconsciously acquire the correct forms. It cannot be learned by setting children to classifying, conjugating or declining. They must learn the art of language and through the *art* come up to the science. Language is a growth. It cannot be stereotyped. Language and thought have reciprocal influence. Right habits of language produce right thinking, and vice versa. The language of a person is a test and evidence of his thoughts and mental culture. The chief cause of alarm is on account of the

woful ignorance of English and the faulty use of our mother tongue among nominally intelligent and educated people—even among teachers, who of all others should use pure language. The teacher is responsible for the language of his pupils.

### Good Language—How Acquired.

We acquire language through imitation; the pupil who has always heard good language, will use good language; his ability to use good language does not depend upon his knowledge of grammar, but upon his having heard good English, read good English and practised good English. Without further comment upon language, we would say, that whatever else may be omitted in teaching,—*no teacher can afford to dispense with the language exercise.*

"I had rather speak five words with my understanding, that by my voice I might teach others also, than a thousand words in an unknown tongue."—*I Cor. XIV:* 19.

# LESSON I.

*I. Directions.*

1. Ask the children to tell the names of the objects—
   a. In the school-room, the yard, the house, etc.
   b. Made of wood, iron, gold, wool, cotton, etc.
   c. Manufactured by the carpenter, moulder, etc.
2. Ask the pupil to tell the names of the parts of things.
3. To name some of the qualities of things.
4. To tell the uses of things.

*II. Cautions.*

1. Insist on correct articulation.
2. Form *correct* ideas ; then insist on the intelligent use of the terms.
3. Let every exercise bear upon the *correct* USE of language.

*III Results.*

1. The command of language.
2. The concise use of language.
3. Increased mental power.

**REMARKS.**

The pupils at first will mention the names of things in the wildest confusion. The teacher listens patiently for a few seconds, then kindly bids them stop, and tells them to begin at a certain part of the room and to speak one at a time, and name things in order.

In the answers constant attention must be paid to the pronunciation of words—*distinct* and *correct* articulation being one of the FIRST requisites of correct language.

Yet this should not be insisted upon to such an extent, as to make it *irksome* to the pupils. The child can attain perfection only gradually, and the teacher should *encourage* but not drive. Indeed, the child needs no driving; he will work cheerfully and zealously with the leader who has learned the *art* of working with the child.

As the names of objects are given by the children, the teacher should write these names in columns on the board, requiring the children to spell each word as it is written, assisting or correcting when necessary.

Let the children say something about each object, the teacher helping them to determine how far the terms they apply are appropriate.

The teacher should add to these descriptions the names, and lead the children on to the formation of simple statements in their shortest form.

### Capital Letters and the Full Stop.

In the written exercise, the children should be led to observe that each sentence begins with a *capital* letter, and ends with a period. The teacher will use JUDGMENT in the assignment of the directions in each lesson.

The directions should be written on the board, *one at a time*, and the pupils requested to follow the directions, and read the statements from the slate. After an exercise has been *carefully* examined, the teacher should require the class to *reproduce* it.

The children may be supplied with little books, in which to write out these lessons at home. For some

time they should not be required to originate anything for themselves, but merely to reproduce that which has been taught in school. They will find *pleasure* in doing that which they can do well.

When all the objects in the room have formed the subjects of such lessons, those in the play-ground, the street, or in the fields, may be resorted to, gradually extending the circle to more remote objects.

At least a dozen lessons of this description should be given.

**Parts of Objects.**

After giving lessons on objects, the teacher will ask the pupils to name the parts of objects, and the number of those parts. This is the second step in language.

In these exercises, the teacher should be careful not to let the children call that a part, which is merely a property or an accident. A part of a material object is a portion of it; if the part is removed, the object will be diminished in *size* and *weight*. It is improper, then, to consider as parts the lines and surfaces of objects.

The exercises on the parts of objects should be varied in many ways, so as to *arouse* and maintain a lively interest in the pupils.

For example—the parts of a *pin* are the *head*, *shaft* and *point*; of a chair, *legs*, *rounds*, *seat* and *back*.

The first step to be taken in language is to obtain ideas. The second is the proper expression of the ideas when obtained.

To acquire ideas, it is necessary to cultivate habits of observation; to use the eyes in noticing not only

entire objects, but also their different parts; to consider their qualities, uses, operations and effects; together with their relations to other things. The mind employed in such processes acquires material for its own operations, and develops ideas and thoughts as it were spontaneously.

For this exercise in language it is proposed that the children be required to enumerate the parts of some visible object, according to the following

**Example.**

*A House.*

Its parts are:

The stone, The sills, The plates, The ceiling,
The mortar, The posts, The rafters, The floor.
The joists, The doors, The shingles,
The beams, The nails, The chimneys,

**Example.**

*Glass.*

Its qualities:

It is hard, inodorous,
solid, colorless,
smooth, heavy,
bright, durable,
transparent, inflexible,
brittle, insoluble,
cold, dry,
tasteless, fusible, etc.

Its uses:

For windows to admit the light,
For spectacles to assist the sight,
For useful vessels, such as goblets, pitchers, bottles, phials, lamps, etc.

Thus far we have endeavored to teach the subjects methodically, so as to teach the pupils the power of

*rapid*, *complete*, and *accurate* observation, and to prepare them for *concise*, *complete*, and *accurate* description.

The teacher in order to give the children information on qualities of objects, so that they may form *correct* impressions, should subject the object to more or less complicated experiments. The names of some of these qualities, *e. g.*, compressibility, flexibility, etc., must be fully illustrated

This exercise will furnish abundant opportunity for the energetic teacher to invent various means of entertainment and instruction.

Interrogate the children closely upon the uses of objects, and require them to write short compositions about objects, to tell the name, parts, qualities and uses.

### The Teacher must have a Plan.

The teacher must have a plan of presenting subjects. Experience daily proves that an *unprepared* lesson, or what may be termed *extempore* teaching is sure to be diffuse and indifferent; besides the teacher must NEVER FAIL to enter the class well prepared, not only in regard to the OBJECT on which he intends to exercise his class, but upon the ORDER in which the exercises are to be conducted, and upon the manner in which the individual pupils are to be interrogated. He must himself have clear and distinct ideas, must observe *accurately* and think *carefully*, *concisely* and *correctly*.

Without these requisites the teacher will fail in language; with them he will accomplish results for which generations will thank him.

# LESSON II.

*I. Directions.*

1 Give the children words similar in pronunciation, but different in spelling.

2. Ask the children—

a. To find the words in the spelling-book.

b. To write all the words they know, that have the words mentioned in them.

c. To make a spelling-lesson of the words named.

d. To write statements, using the words named.

e. To write a composition, using the statements.

*II. Cautions.*

1. Require the children to answer, in *full* statements.
2. Give *constant* attention to *distinct* articulation.
3. Correct the *common* errors in pronunciation.
4. Make the exercise *pleasant* and *instructive.*

*III. Results.*

1. The children will *understand* the meaning of words.
2. They will learn correct simple expression.
3. They will learn how to write and spell.

An exact copy of a lesson given in the Primary Department of the State Normal School in Buffalo, New York, is here appended.

The words for practice, *beech* and *beach.* List of words, given by the pupils :

| *I. Beech.* | *II. Beach.* |
|---|---|
| 1. beech-tree, | 1. sand-beach, |
| 2. beech-nut, | 2. shell-beach, |

3. beech-leaf,
4. beech-wood,
5. beech-root,
6. beech-twig,
7. beech-bark,
8. beech-oil.

3. pebbly-beach,
4. beach-timber,
5. Rye-beach,
6. ocean-beach.

**Sentences.**

*I. Beech; a tree.*

1. The *beech*-trees make a nice shade in summer.
2. The *beech* has a smooth green bark.
3. The squirrel hides *beech*-nuts in his hole for winter.
4. *Beech*-wood snaps in the fire.

*II. Beach; a sandy shore.*

1. Year before last we all went to Rye-*beach* in vacation.
2. O, see the pretty pebbles I picked up on the *beach!*
3. What fun it is to walk barefoot on the dry warm sand, down on the *beach.*

*III. Compositions.*

1. A beech-tree is a very large forest tree. It has little three-cornered beech-nuts on it. I was out in the country once and I saw very many little shells of the beech-nuts where the squirrels had been. The beech-wood snaps when you put it into the fire, and makes a very hot fire.

2. I went down to the Beach one day and the sand was all smooth. I was on the Beach of Lake Michigan once and made little houses of the Beach pebbles in the sand. Rye Beach is where the people go to bathe in the summer.

3. A squirrel is a animal that eats Beech-nuts. When you burn beech-wood it crackles and snaps all on the carpet like ashes. The beech-tree grows to be very large and when it is very large men go and chop them into wood the beech-nut is very good to eat I had some twice and they were good sometimes people

get oil from the nuts ; beech leaves are good to chew they have a sour taste they are very good; beech nuts are big as the end of the finger they are three-cornered the beech-nut tree grows in Europe and america.

The last was written by the youngest girl in the class, aged eight. All are printed just as written.

**REMARKS.**

Children from eight to ten years of age may be able to do the work, if the teacher carefully follows a plan.

The teacher should spell and pronounce the words, if the children cannot,and also tell their *exact* meaning and illustrate them, if possible ; try to draw a picture at the board,—an indifferent one is better than none.

The object is to teach spelling, writing and correct simple expression.

The exercise will not prove *irksome*, but very *pleasant* and *instructive*.

All erroneous expressions made use of by the children should be *immediately* corrected and the proper words FIXED upon the mind by *repetition*.

In the daily work of the school-room, all definitions of the meaning of words, and all descriptions of places, objects, or events, whether given by the teacher to the children, or elicted from them, should be clothed in *simple* and *definite* language, and FIXED in the memory by *repetition*.

The children should be trained to give COMPLETE answers to *all* questions which are put to them. Experience teaches that nothing more tends to make an idea *clear* to the mind, and to render it a permanent possession, thence the act of clothing it in *accurate language*.

Monosyllabic answers, as "yes" and "no" should be rejected, except when they express *all* that can be said on the subject.

The value of such instruction has not hitherto been sufficiently appreciated, but it is hoped that these lessons will show how suited it is to the youthful mind and calculated to promote mental training.

# LESSON III.

*I. Directions.*

1. Hold an object before the pupils and ask them to say something about it.
2. Place objects of the same kind in their hands, and let the pupils describe them; first an oral, second a written description.
3. Let the pupil compare objects, and tell their differences, as paper and leather, lead and iron, wood and stone, etc.
4. Let the pupils ascribe different qualities to one and the same object.
5. Let the pupils ascribe the same quality to various objects.
6. Let them apply many descriptive terms, applicable to various objects.
7. Let them point out the value of each word and state what it adds to the description.

*II. Cautions.*

1. See that the children form *correct* ideas.
2. Correct all *improper* expressions.
3. *Fix* the new word in the mind by frequent reviews.
4. The teacher should assist the children in determining the suitability of words, correcting when necessary.
5. Encourage the children to reproduce lessons at home.

*III. Results.*

1. To train the children to SEE.
2. To teach them to COMPARE.
3. To train them to DO.
4. To train them to tell what they SEE and DO.

**REMARKS.**

The teacher should require the pupils to answer in *complete statements*, and encourage them to examine the objects *very carefully*

In the oral description let the children give the general properties, as the form and color; then the parts, properties and uses. In the written description require the work to be expressed neatly, giving attention to *spelling*, *writing*, *capital letters*, *and punctuation.*

The teacher will write the name of some familiar object on the board, and will call upon the children to apply to it various qualities, writing them as they give them. It may be necessary to assist the children in determining the suitability of the qualities and also in spelling the more difficult words.

We may suppose a lesson in which the given name is "paper" It would present itself in such a form as this:—

The paper is white.
The paper is thin.
The paper is smooth.
The paper is pliable, etc.

The teacher should next lead the children to notice that the word "paper" need only be written once, and that the four sentences may be contracted into one. Then the teacher directed by the children writes:—

Paper is white, thin, smooth and pliable.

The children then read this over, and are lead to perceive the necessity for commas in those places where the words "the paper is" are omitted, and also the use of the word "and" between the last two

words of the sentence. Cover the board and require the children to reproduce the lesson.

When the same quality is attributed to many objects, it would present itself in such a form as this:—

Glass is brittle.
Chalk is brittle.
Coal is brittle.
Glass, coal, and chalk are brittle.
Iron is hard.
Flint is hard.
Glass is hard.
Iron, flint, and glass are hard.

The children should be led to notice the stops as before, and the change of the word "is" for "are."

Let the children observe that each sentence begins with a capital letter, and ends with a period. Examine each slate, and require the children to reproduce correct copies.

Let the children observe that words used in a series are separated by a comma.

Require the children to write many sentences, until this fact is fixed in the mind.

A practical knowledge of language can only be acquired through an *intelligent* use of it; children should be taught to *speak* and *write* the English language *correctly*, to be able to *detect* the more frequent errors and *correct* them. These results can only be accomplished through *intelligent teaching*.

Children should not be taught the final deductions of the science of language, which are definitions; they should not commit to memory arbitrary rules, but learn the correct use of language. The ordinary methods of teaching grammar do little to establish this.

# LESSON IV.

*I. Directions.*

1. Ask the pupil to give a name that will apply to everything which they can perceive.
2. Ask the pupils—
   a. To classify the different kinds of matter.
   b. To name the different classes.
   c. To name things that belong to the individual classes.
   d. To observe and tell what *animals* and *vegetables* do.
   e. To notice and tell what animals can *do* which the vegetable *cannot* do.
   f. To observe the differences between the food of plants, and that of animals.
   g. To write a statement using the words named.
   h. To write a short composition, combining the statements.

*II. Cautions.*

1 "Never assist the child to do a thing that it can do itself" with reasonable effort.

2. Remember that it is a difficult thing to form a thought and express it.

*III. Results.*

1. It will *arouse* the curiosity of the pupils.
2. It will *enlist* their undivided attention.
3. It will cause them to observe closely.
4. It will teach them the importance of classification.

**REMARKS.**

The aim of these language lessons is to enlarge the

circle of the pupil's knowledge respecting the objects brought under inquiry. The *true* aim is not only to impart knowledge *rightly*, and teach the elements of order, but to *train the powers* of the pupil. This is its *dignity* ; this its peculiar distinction. The main design is the *growth* and *development* of the whole being.

In order to teach language *effectively* we must begin the process, as nature meant we should : by furnishing the children with the elements out of which language is created, namely, a knowledge of material things.

The teacher should place upon the table a number of articles, that belong to the mineral, vegetable and animal kingdoms. He should ask the children to examine them *carefully*, and to tell a name that will apply to *all* of them. (It would be well to ask the children to bring different things from their homes.)

The children will give the following names: articles, objects, substances ; they may not be able to give the *term* that you wish, which is "matter" Write the words on the board, and tell the children that the *term* MATTER, is the one that you wish.

### Classification.

After the children become *familiar* with this term, you may ask them to put all the objects of the same kind into groups. They will learn to classify objects—a *very important* lesson. The teacher will then ask the children to name the different groups, viz : *mineral, vegetable* and *animal.* (It may prove a *surprise* to some of the children, that they belong to the animal kingdom.)

Many lessons may be given, requiring the children to name things that belong to the different classes.

The teacher should require the children to bring in long lists of these names; an exercise of this nature will prove very *pleasant and instructive.*

Let the children observe that the animals move about, and plants are stationary; that animals and plants take food, breathe, grow and die; that plants feed on minerals; and animals on vegetables and animals.

The teacher should be very careful about assisting the children; it may be well to let a question remain unanswered for a day or so and see if the pupils cannot find out the answer by a few hours' study.

At first, with the exercises on language, the teacher should reach the mind only through the senses, either directly or indirectly, with the assistance of memory and imagination.

We learn by observation; the human mind first perceives the impressions made upon by external objects and phenomena through the various inlets of the soul—the senses, and forms them into clear and distinct ideas.

We are, then, justified in stating that the principal aim of school education is to teach the pupils HOW TO FORM IDEAS AND HOW TO EXPRESS THEM

# LESSON V.

We introduce at this point a new class of objects, viz: Words in regard to some of their offices. We have examined the nature and functions of other things and have made use of the facts thus obtained as material for language development. Words, as will be seen, can be made to give us a large stock of working material to be used in advancing the Art of Language.

**The Noun.**

*Teacher*—"What is this?"

*Pupil*—"A bell."

"Spell the word bell?"

NOTE:—Pupil spells the word, and teacher writes it on the board. Obtain and dispose of, similarly, the following: book, pencil, cup, Henry, Aurora.

"What are these on the board?"

"They are words."

"Pronounce this word: Henry."

"Henry."

"When you see or hear this word, of what do you think?"

"I think of a boy."

"What boy?"

"My brother."

"Why, when you hear this word, do you think of him?"

"Because that is his name."

"What kind of word is it?"

"A name word."

"Of what is it the name?"

"It is the name of a person."

"Of what is the word cup a name?"

"The name of a thing."

"Find other words upon the board that are the names of things." (Pupils find pencil, book, bell.)

"Of what do you think when you speak this word?" (referring to the word Aurora.)

"Of a town."

"Why do you think of a place?"

"Because it is the name of a place."

"Find another word and tell of what that is the name."

"Wednesday is the name of a day."

"What is each of these words?"

"A name."

"Does any one know another word that means the same as name?" (No hands are raised.)

"You may call these words nouns." (Pupils spell)

"What is a noun?"

"A name is a noun."

"Give me twelve names." (Pupils give names and spell them.)

For to-morrow write:

1. Ten words that are the names of persons.
2. Ten words that are the names of things.
3. Ten words that are the names of places.

# LESSON VI.

**The Common Noun.**

"What is this?" (touching one of the boys.)

"A boy."

"What are you?" (addressing a boy.)

"A boy." (Address several boys and obtain similar replies.)

"By what name may all of you be called?"

"Boys."

"A boy may open the door." (Several boys start to obey.)

"Why do so many of you start when I speak?

"We don't know which one you mean."

"Why?"

"Because the name boy belongs to each of us."

"What name belongs to each of you?"

"Boy."

"What have you learned to call a word that is a name?"

"A noun."

"What then is the word boy?"

"A noun."

"Why is it a noun?"

"Because it is a name."

"Because the name applies to each of you, what kind of a name is it?"

'A common name."

"What kind of a noun is it?"

"A common noun."

"What is a common noun?"

"A common name is a common noun."

"But when is a name common?"

"When it applies to each one of the same kind of objects."

"What, then, is a common noun?"

"A name that applies to each one of the same kind of objects is a common noun."

"Peter, bring me five things that have a common name. What are these called?"

"Books."

"What name may be given to each boy and girl is this school?"

"Pupil."

"What common name may be given to Miss ——, Miss ——, and Miss —— ?"

"Teacher." "Lady." "Woman."

"What kind of nouns are pencil, pupil, teacher, lady, boy, girl?"

"Common nouns."

For to-morrow write a list of :

1. Twenty common nouns that are names of articles of furniture.

2. Twenty common nouns that are names of tools.

3. Twenty common nouns that are names of vegetables.

4. Twenty common nouns that are names of minerals.

# LESSON VII.

### The Proper Noun.

"Jane, write your name on the board." (Pupil does so.) "What have you written?"

"I have written my name."

"Why do you say "my name?""

"Because it belongs to me."

"What other person in your family has the same name?"

"No other person has the same name."

"Class: why do you think a different name from any other in her family was given?"

"To tell her from the others."

"To how many of her family does the name Jane belong?"

"It belongs to one."

"What is this name?"

"This name is a noun."

"What is a noun?"

"A name is a noun."

"Because this name belongs to one only, what kind of a noun is it?"

"It is a particular noun."

"You may call it a proper noun. What is a proper noun?"

"A particular name is a proper noun."

"To how many does a proper noun belong?"

"It belongs to one."

"Give a name that is common to those three things." (Pointing to a pile of books.)

"Book."

"Give the proper name."

"Monroe's First Reader, Webster's Dictionary, Thomson's Arithmetic."

"Open your readers and find five proper nouns." (Pupils do so.) "With what kind of letter is each begun?"

"With a capital letter."

"Find a proper noun that does not begin with a capital letter." (Pupils fail to find one.)

1. Write ten proper nouns that are the names of men.

2. Write ten proper nouns that are the names of women.

3. Write ten proper nouns that are the names of places.

4. Write ten proper nouns that are the names of divisions of time.

# LESSON VIII.

**The Possessive Form of Nouns.**

"What is this?"

"That is a hat."

"Whose hat is it?"

"William's."

"Make a statement of what you say."

"That is William's hat." (Some of the pupils write this statement on the board; the others write it on their slates.)

"What is the word William's?"

"A noun."

"What kind of a noun?"

"A proper noun."

"For what is it used in the sentence?"

"To tell whose hat." "To tell who owns the **hat.**"

"You may say posesses, instead of owns."

"To tell who possesses the hat."

"Speak the word as we commonly hear it." (Pupils do so.)

"Speak the word as it is here used." (Pupils do so)

[This should be repeated, with this and other nouns, until the pupils perceive clearly, and can state the difference between the sounds of the two forms.]

"Open your books and find names used as we have used the name William in this sentence." (Pupils find many words and pronounce them.)

"What is the difference in the sounds of these words, and the same words as they are commonly called?" (Pupils state.)

"What do you find in the printed word to represent that difference?"

"An apostrophe and a letter s."

"As you look at the words William and William's, what difference can you see?"

"One has more letters than the other." "A difference in the size of them." "A difference in the form of them."

"Because William is the way we commonly use the word, what form may we call it?"

"The common form."

"What shall we call the other form?" (Pupils do not know.)

"You may call this the possessive form of the noun." (Pupils spell the word.)

1. Write ten common nouns in the possessive case.

2. Write ten proper nouns in the possessive case.

*In like manner develop* ALL *the Part of Speech*, as the adjective, pronoun, verb, etc., and make *immediate application of the terms developed.* This will lead the pupils pleasantly into the Science of Language, and it will become a rational study.

# LESSON IX.

## Quoted Words. Quotation Marks.

"What is an exclaiming sentence?" (Pupils give definition.)

"John, give an exclaiming sentence."

"O, how cold it is!"

"Mary, tell me what John said."

"John said, 'O, how cold it is.'"

[Pupils repeat, spell words and write upon their slates, after which teacher writes upon the board without punctuating. Two other sentences are obtained and similarly disposed of.]

"Read what John said."

"'O, how cold it is!'"

"What are you doing when you speak the words that he said?"

"Copying his words." "Repeating his words."

# LESSON X.

**The Comma—Its Use in a Succession of Particulars.**

"I want you to tell me, by writing on your slates, five things that this knife has."

[The pupils at the age of those for whom these lessons are intended will, almost without exception, write five sentences.]

"This knife has a handle."

"This knife has a blade."

"This knife has a back."

"This knife has a spring."

"This knife has rivets."

"How many sentences have you written?"

"Five."

"See how many times you have written the words *this*, *knife*, *has*, and *a*. Can you not shorten the work by putting all you have to say into one sentence?" (Pupils write.)

"The knife has a handle and blade and back and spring and rivets."

"Listen closely. I am going to ask you another question. What is the use of the of the words handle, blade, back, spring and rivets? What did you discover?"

"You said and, only before the last word."

"Now, I think you can give the sentence that you have been writing, and have it just right. Who will try?" (Hands are raised.)

"The knife has a handle, blade, back, spring and rivets."

"That is right. All repeat." (Pupils repeat, and write on their slates.)

"There is a question unanswered. Who can give it?" (Hands are raised.)

"What is the use of the words handle, blade, back, spring and rivets?"

"Right. Who will answer it?"

"To show what the knife has."

"Because they are all used for that purpose, what may we say about them."

"They are used in the same way." "They are used alike."

"Now, turn to your books, and find words that are used alike, and see how they are written; then we shall know whether our work is right or not. What do you discover?"

"There is a comma after each of the words except the one before the last." (Pupils correct the work on their slates.

"You say these words are used in the same way. How many words in this sentence are used in the same way?"

"Five." "Many." "Several."

"Which now makes the best answer to my question—five, many or several?"

"Several."

"I think so. We have learned something about the use of the comma, and I want you to tell me what it is."

"When several words are used in the same way, a comma is placed after the one before the last."

[Teacher ought now to suggest many kinds of sentences containing successions or particulars, and have them all written and carefully criticised. Drill on this lesson should continue several days.]

# LESSON XI.

*I. Directions.*

1. The teacher will select a familiar theme and ask suggestive questions.
2. Write the correct answers on the board.

**Theme—Water.**

a. Where does the water come from?
b. How does it reach the clouds?
c. In what form is it carried?
d. What causes it to fall to the earth?
e. Is rain useful?
f. In what way is it useful?

**Theme—A Journey.**

a. The starting point.
b. Time of departure.
c. Mode of travel.
d. Destination.
e. Appearance of the country.
f. Kind of trees, flowers, etc.
g. Return.

CAUTION.—Enlarge upon the idea of *criticising* and *correcting* by the pupils.

# LESSON XII.

*I. Directions.*

1. Tell or read a short story, and require the pupils to reproduce it.
2. Write a letter to a wealthy merchant in New York city, requesting a situation as salesman in his store.
3. Write an advertisement describing a lost child.
4. Write a composition on each of the following proverbs, explaining its meaning, and showing how far it is true:—
   a. "Fortune favors the brave."
   b. "All is well that ends well."
   c. "Strike while the iron is hot."
   d. "A little pot is soon hot."
   e. "Out of sight out of mind."
5. Take some poem of several stanzas, and write your opinion of it.
6. Write a letter to the "New York Times," giving an account of a railway accident.
7. Write an allegory comparing tobacco to a thief.

**REMARKS.**

Perhaps as easy a method as any to induce the younger class of pupils to make their first efforts at composition is to read or relate to them a short, but interesting story, and desire them to write an outline of it, as full and extended as they can within a given time. In such an exercise the thoughts are already furnished and the only labor of the pupil is, to place

them in their proper connection and clothe them with good language. In an exercise of this kind the pupil takes one of his first lessons in generalization; he learns to separate and classify facts, selecting the most important, and rejecting those of little consequence. A similar course should be observed by students in History, writing each day a fair outline of the subject-matter contained in the pages of their lesson.

**Theme—Abraham Lincoln.**

*I. His Early Life.*

a. Birth.
b. Childhood.
c. Youth.
d. Manhood.
e. Difficulties.

*II. His After Life.*

a. Occupation.
b. Election to the Presidency.
c. Administration.
d. Assassination.
e. Burial.

*III. His Character.*

a. Simplicity.
b. Uprightness.

**The Influence of Kind Words.**

*I. A Kind Word costs nothing, yet its influence may last through a life-time.*

a. Kind words at home.
b. Kind words in school.
c. Kind words to friends.
d. Kind words to our inferiors.
e. Kind words to strangers.
f. Kind words to animals.

*II. The Influence upon the Speaker.*

a. They gain him friends.
b. They gain him a reputation for amiability.
c. They keep alive his kindly feelings.
d. They produce images of beauty in his mind
e. They win for him love and gratitude.

*III. The Influence upon the Hearer.*

a. They shame him out of anger.
b. They comfort him in grief.
c. They soothe him in pain.

*IV. The Influence upon Children.*

*V. Influence upon the Poor.*

*VI. Influence upon Other People.*

a. The morose.
b. The misanthopic.
c. The wicked.
d. The weak.

*VII. Uses of Kind Words.*

*VIII. Value of Kind Words.*

*IX. Compared with:*

a. Angry words.
b. Cold words.
c. Hot words.
d. Bitter words.
e. Vain words, idle words, empty words, profane words, &c.

*X.* Conclude by any instances you may be able to recall, of the influence of kind words, in your experience; as, an anecdote or incident.

It is almost impossible to over-estimate the influence of a kind word. Years after the speaker has forgotten it, or the occasion upon which it was spoken, the hearer will feel the result of the encour-

agement it gave him, the difficulty it smoothed or the sorrow it comforted. Especially to the weak, the aged or the erring, should we offer these aids in life's rough path. Costing nothing, they may prove pearls of the highest price. They have the wondrous property that they can never prove harmful, either to the speaker or the hearer. They cannot injure, they cannot cause contention, they cannot raise harsh feeling. Cherish, then, the kind heart, full of love for your fellow creatures, and kind words will spring to your lips, to bless and comfort all around you.

### Politeness.

*I. Definition.*

Ease and grace of manner, united to a desire to please others, and a careful attention to their wants and wishes.

*II. Politeness exacts of us:*

a. Unselfishness, in our care for the comfort or pleasure of others.
b. Elegance of manner, in our desire to please by our deportment.
c. Deference toward our superiors, either in age, station or importance.
d. Kindness to our inferiors, either children or servants.

*III. Value of Politeness.*

a. It proceeds from the impulse of a kindly nature, proving a good heart.
b. It will admit of a great degree of polish, proving a finished education.
c. It gives respect where it is due, and thus wins consideration in return.
d. It gives kindness to inferiors, and thus wins respect and gratitude from them.
e. It promotes good feeling among friends.
f. It prevents discords, even among enemies.

*IV. Natural Politeness.*

a. Proceeds from the heart without instruction.
b. Often to be found among us the rough and uncultivated, even if more clumsily expressed than among the educated and refined.

*V. Acquired Politeness.*

a. The observance of points of etiquette and good breeding by the well educated.
b. Mere polish of manner, often covering a selfish, hard nature.

*VI. Politeness in different Countries.*

a. The etiquette of one nation often considered rude or insulting in another.
b. Every race, even the most savage, has some form of outward politeness.
c. Name any peculiar form of etiquette you may have seen or read of.

*VII. Politeness in Children and Young People is one of the most winning and graceful of attributes. It is a mistaken idea to fancy rudeness a token of manliness or bravery. Bayard, one of the bravest of Cavaliers, was one of the most finished gentlemen mentioned in history.*

*VIII. Perfect Politeness may be defined as the union of natural politeness of the heart, and the acquired Politeness of Etiquette and Custom. Holmes describes the combination:*

"So gentle blending courtesy and art,
That wisdom's lips seem'd borrowing friendship's heart."

## Wisdom is Wealth.

*I. Wealth may be defined as*

a. Great possessions.
b. A large amount of worldly good.

*II. Mere Money may, it is true, be considered as Wealth, but are there not more precious possessions, worldly goods far more valuable?*

*III. Poverty, it is true, will impede our search for Wisdom, as we shall lack:*

a. Time for study, if obliged to earn a livelihood.
b. The means of buying books.
c. The advantages of good instruction.

*IV. But Wisdom once gained is preferable to Money, for these reasons:*

a. Once gained it cannot be taken from us, while money may be lost by a thousand reverses.
b. It can never be given to us, but we must taste the sweets of exertion and enjoy the reflection that we have earned our treasures.
c. We can never acquire wisdom by theft, or inherit it when dishonestly acquired, as we might mere money.
d. Wisdom is independence. The man who has acquired knowledge, can in a great measure control his own future. His opportunities for earning money are largely increased; his pleasures lie in his love of reading and study, and are therefore always open to him; he is respected by his fellow men; he never feels the weariness of the vacant mind, if reverses come to him—his wisdom enables him to meet them bravely and often to conquer them.

*V. Conclusion.*

In starting, therefore, in life, the possession of wisdom is far preferable to the possession of mere money, if ignorance is the price of the latter. A fool can never win honor or even respect, if he were to possess unbounded riches; all the pleasures that can be purchased are nothing compared to the delights of a cultivated mind and a refined intellect.

Seek, therefore, to gain wisdom, that you may possess that true wealth that can never be taken away from you, that you will never lose, that you may impart freely to others, and in so imparting increase your own store rather than diminish it.

Whose life most brightly illuminates the pages of the past—the wise man's or the rich man's?

In the history of the future, aim rather to figure as a Socrates than as a Crœsus.

Compare the life of the wisest man you can remember, and that of the richest man.

Knowledge is Power; Wisdom is Wealth.

### Absent Friends.

*I. Introduction.*

In this world of change, every one is called upon to feel the pain of separation from friends endeared by association or acts of kindness. The dearest friends are severed by circumstances, often having the ocean between them.

*II. Treatise.*

a. Affection is kept warm by kind remembrance.

b. Tender recollection will dwell upon words spoken by the absent, and the memory of their acts will be cherished with pleasure.

c. Their return to us, or our joining them, will be anticipated with delight.

d. The circumstances under which separation took place, will seriously affect our thoughts.
   1. Parting in anger. Time heals rage.
   2. Parting in affection. Time increases love.
   3. Parting in sorrow. Anticipated joy of meeting again.

e. Separation by death.
   1. Memory of friends becomes then a holy and pleasant duty.
   2. Faults are forgotten when the grave closes over them.
   3. Virtues are remembered with reverence when associated with death.
   4. But few homes are without their unforgotten dead, whose memory is associated with some spot or hour.

f. Compare the pain of parting and the pleasure of meeting.
   1. After a journey.
   2. After years of separation.
   3. Hope of reunion in another world.

"The joys of meeting pay the pangs of absence;
Else who could bear it?" [ROWE.

*General Directions.*

1. *Make a plan or outline of the essay before writing any part of it.*
2. *Note down in writing any useful thought that may occur to you while you are collecting material for your composition.*

**Exercise in Synonyms.**

1. *Custom—habit.*—*Custom* respects the action; *habit* the actor. By *custom* we mean the frequent repetition of the same act; by *habit* the effect which that repetition produces on the mind or body.
2. *Pride—vanity.*—*Pride* makes us esteem ourselves; *vanity* makes us desire the esteem of others.
3. *Enough—sufficient.*—*Enough* relates to the quantity which one wishes to have of anything; *sufficient*, all that is needed.
4. *Remark—observe.*—We *remark* in the way of attention, in order to remember; we *observe* in the way of examination, in order to judge.
5. *Qualified—Competent.*—*Qualified*, having the training, skill, knowledge; *competent*, having the power.
6. *Entire—complete—perfect.*—*Entire*, having all its parts; *complete*, all its appendages; *perfect*, all essentials, without flaw.
7. *Fortitude—courage.*—*Fortitude*, power to endure pain; *courage*, power to face danger.
8. *Vocation—avocation.*—*Vocation* is the calling or profession; *avocation*, the temporary employment.

9. *Excuse — pardon — forgive.* — We excuse slight offences; we *pardon* manifest faults; we *forgive* sin.
10. *Grand—sublime.*—Lovely, pretty, beautiful. (We omit definitions.)
11. *Amuse—divert—entertain.*—*Amuse*, to pass time lightly and pleasantly away; *Divert*, to turn one's thoughts to something of a livlier interest; *entertain*, to put the mind into agreeable contact with others, as through conversation, or a book.
12 *Arduous—hard—difficult.*—*Difficult*, anything that requires more or less exertion to perform it; *hard*, that which requires a decidedly greater effort to perform it; *arduous*, that which requires strenuous and perserving effort to perform it.

*Gospel.*—Derived from the Saxon adjective Gôd, meaning *good* and spell, a narrative—the good narrative, or glad tidings.

This can be made a very pleasant and instructive exercise; the teacher should explain and illustrate the synonyms, and require the pupils to form sentences, using the words correctly. It will teach precision in the use of words; great care should be taken to distinguish between the general meanings and particular applications.

Instruct the pupils to use *simple*, *plain* terms; compare the quotations below and study the difference in the simplicity of the thought.

"Life is real, life is earnest; and the grave is not its goal. Dust thou art, to dust returnest, was not spoken of the soul."—*Longfellow.* "Life is the definite combination of definite composite heterogeneous changes, both simultaneous and successive, in correspondence with external co-existences and sequences."—*Herbert Spencer.*

### Common Mistakes.

1. "We have no corporeal punishment here" said a teacher. *Corporal* means having a body. *Corporeal* is opposed to spiritual. Say, *corporal* punishment.
2. "*Set* down and rest yourself;" say, *sit down.*
3. "*Who* do you mean?" say, *whom.*
4. "He *has got* my slate;" omit *got.*
5. "*Who done it*;" say, *who did it.*
6. "*I intended to have written* a letter yesterday;" say, *to write.*
7. "The girl speaks *distinct*;" say, *distinctly.*
8. "He lives *at* New York;" say, *in* New York.
9. "He made a great *splurge*;" say, he made a blustering effort. The first savors of slang.
10. "My brother *lays* ill of a fever;" should be my brother *lies* ill of a fever.

### Vulgarism.

The following words and expressions should be strictly avoided in conversation and in writing. Only a few of the many hundreds in use by *uneducated* people, will be noticed.

1. "Acknowledge the corn,"—instead of to admit.
2. "Ain't,"—instead of is not, or isn't.
3. "Awful,"—instead of ugly or difficult.
4. "Beat out,"—instead of tired.
5. "Dreadful,"—instead of very.
6. "Hopping mad,"—instead of very angry.
7. "Strapped,"—wanting or out of money.
8. "Wrathy,"—instead of angry
9. Female,—incorrectly used to denote a person of the female sex. "To speak of a woman simply as a female, is ridiculous."

The teacher should keep a record of all the mistakes made by the pupils, and encourage them to do the same. Once a week they should be written on

the board, and *corrected* by the pupils ; the teacher assisting when necessary.

The pupils should be required to copy in a note-book, the exercises in a form similar to the above.

Let the pupils learn the *correct* way of speaking by a *correct use* of the term. Arbitrary rules are of little use in the beginning.

### REMARKS.

The teacher, at first, will assist the pupils to classify subjects, draw outlines and form correct tabulations. Questions may be used for a brief time, to teach classification ; but should be cast aside as soon as possible. The teacher should always require pupils to hand in an outline of the subject. This plan will cultivate individuality and originality and give the pupils a training, intellectually, that will prove of great service in after life.

As a *special* science, language is abstruse in character, applying mainly to reason ; hence it belongs to the advanced course. As an imitative art, it applies mainly to perception, hence it belongs in the primary course. Grammar is a special science, and should be taught through the *use* of it, rather than the use through the science.

### Closing Remarks on the Manner of Teaching Language.

The teacher must not attempt to do any more than she can do well. It would not do, for instance, to select an object in which the properties to be illustrated were not well developed, nor an object with which the pupils were not familiar.

Every lesson should be given in such a way as to draw out the perceptive powers of the pupil by leading him to *reflect* on what he sees, or to analyze the object before him. It is at first though strange—although it is true—that powers are to be strengthened only by teaching the pupil to THINK upon what he sees.

### How to Conduct a Lesson.

1. Prepare yourself before hand on the subject, fixing in your mind exactly what subjects you will bring up, just what definitions and illustrations you will give or draw out of the class.
2. Have the work marked and written down in the form of a synopsis.
3. Use the board in all exercises; write on it technical words, classification of the knowledge brought out in the recitation, and whenever possible, illustrative drawings.
4. Whenever the subject is of such a nature as to allow it, the teacher should bring in real objects illustrative of it and encourage the children to do the same.
5. Do not burden the pupil with too many new technical phrases at a time, nor fall into the opposite error of using only the loose common vocabulary of ordinary life which lacks scientific precision.

### Recapitulation.

*To name once more in a brief manner the cardinal points to be kept in mind constantly by the teacher.*

1. Discuss the topics *thoroughly*.
2. Do not overburden the pupil's memory.
3. Do not distract his power of attention.
4. Never take up a topic that you are unable to explain and illustrate so clearly as to make the pupil understand it.
5. Avoid all phases of the subject that will tend to confuse rather than enlighten.

6. Draw out in a conversational way the experience and information which your scholars already possess on the subject.
7. Never omit to show by a synopsis on the board, what has been discussed in the lesson, its classification and relation.
8. Require short weekly compositions of the pupils, expressing in their own language their ideas on the subject.

We have presented a few language lessons, suggestive, only, as to the manner of teaching.

Teachers who have not taught language we would encourage to begin, and make provision for it on the daily programme.

Arithmetic, geography and reading do not form the *sole* basis of elementary education; and some of the sad experiences of the past few years in speaking and writing the English language, prove that language should have a VERY PROMINENT place in the programme.

**Topics for Brief Lectures in the School-Room.**

By spending ten or fifteen minutes each day, in a familiar, conversational lecture, upon some topic or object, selected from the following list, not only will the scholars be interested and learn many new truths in a way to remember them, but the teacher himself will derive great advantage from his preparation for such an exercise. Whenever it can be done, the means of illustration should be at hand, to demonstrate to the eye, and thus fasten upon the mind, the facts and reasoning of the lecturer. The curiosity of the pupils should be

excited, and questions and remarks from them encouraged, and by these means they will be led to closer habits of thought and observation.

1. Glass.
2. India-rubber.
3. Leather.
4. Sponge.
5. Wool.
6. Wax.
7. Whalebone.
8. Bread.
9. Ivory.
10. Chalk.
11. A pin.
12. A pencil.
13. A brick.
14. An acorn.
15. A cork.
16. A stone.
17. Cinnamon.
18. Nutmeg.
19. Ginger.
20. Cloves.
21. Water.
22. Oil.
23. Vinegar.
24. Butter.
25. Cheese.
26. Coffee.
27. Tea.
28. Rice.
29. Paper.
30. Cotton.
31. Flax.
32. Silk.
33. Gold.
34. Silver.
35. Mercury.
36. Lead.
37. Copper.
38. Iron.
39. Tin.
40. Lime.
41. Coal.
42. Granite.
43. Salt.
44. Slate.
45. Feather.
46. Coral.
47. Gutta-percha.
48. A piece of fur.

1. Rotoundity of the earth.
2. Spheroidal form of the earth.
3. Origin and use of salt in the sea
4. Commerce.
5. The seasons.
6. Phases of the moon.
7. Tides.
8. Eclipses.
9. Electricity.
10. Mariner's compass.
11. Circulation of the blood.

### Questions for Debate.

Is the farmer the most useful member of society?
Does wealth tend to exalt the human character?
Has civilization increased human happiness?
Are great men the greatest benefactors of the world?
Is intemperance a greater evil than war?
Do inventions improve the conditions of thelaboring classes?
Is the expectation of reward a greater incentive to exertion than the fear of punishment?
Do savage nations possess the right to the soil?

Is the mind of woman inferior to that of man?
Is the pen mightier than the sword?
Has increased wealth a favorable influence on the morals of the people?
Did the Crusades benefit Europe?
Was the invention of gunpowder an evil?
Is the existence of political parties an evil?
Is the pulpit a better field for eloquence than the bar?

**Subjects for Compositions.**

Spring.
Flowers.
A Thunder-storm.
What becomes of the Rain?
Snow.
Mountains.
Forests.
The Beauties of Nature.
Our Country.
The Study of History.
Peace.
War.
The Ruins of Time.
The Fickleness of Fortune.
A Dream.
A Ray of Light.
A Drop of Water.
Immutability of Change.
Town and Country.
Never Give Up.
Benevolence.
History of a Looking-Glass.
Power of Mind.
The Bible.
The Ruins of Time.
The Sunny Side.
Blessings of Hope.
Flowers of Memory.
The Prairies.
Unity in Diversity.
The Starry Heavens.
By-gone Hours.
Immortality of the Soul.
Influence of the Great and Good.
Poetry of Nature.
Music of Nature.
Memory of our Fathers.
Matter and Mind.
The Stuff that Dreams are made of.
Spring.
The Seasons.
Heat.
Light.
The Spirit of Discovery.
The Art of Printing.
Newspapers.
Novelty.
The Sun.
The Rainbow.
The Moon.
The Aurora Borealis.
The Stars.
The Earth.

The Shady Side.
Human Genius.
Aim High.
Past and Present.
Book of Nature.
Hope On, Hope Ever.
Nature's Mysteries.
The Contrast.
Magic of Kindness.
Cost of Civility.
Things that Cost Nothing.
The Orphan.
The Rolling Stone.
Teachers.
Loved Faces.
We Bloom to-day, to-morrow Die!
The Wreath of Fame.
Reflections of a Looking-glass.
Early Companionship.
Music of the Sea-shell.
Letter from the Town.
Letter from the Country.
Tricks of Trade.
Keepsakes.
My Room-mate.
The True Friend.
What shall we Read?
School Associations.
Paddle your own Canoe.
Star of Home.
One by One.
I've Wandered in Dreams
Philosophy of a Tear.
Music of the Spheres.
Oppression the Nursery of Reform.
The Study of Geography.
The Pleasures of Travelling.
The Applications of Steam
Rivers.
To-morrow.
The Ocean.
Manufactures.
The Influence of Woman.
Hero-worship.
The True Hero.
Sources of a Nation's Wealth.
Commerce
Early Rising.
Cheerfulness.
The Uses of Biography.
The Backwoodsman.
Punctuality.
Curiosity.
Foppery.
Gardening.
Modern Delusions.
Young America.
The Multiplication of Books.
The Philosopher's Stone.
Nature and Art.
The Freedom of the Press.
The Present.
The Past.
The Future.
Silent Influence.
The Monuments of Antiquity.
Rome was not built in a day.
The First Stroke is Half the Battle.

Beacon-lights of the World.
The Book.
Peaceful Conquests.
A Picture of Fancy.
Leaflets of Memory.
Silent Influence.
Make Hay while the Sun shines.
Necessity is the Mother of of Invention.
A Soft Answer Turneth away Wrath.
Avoid Extremes.

For the benefit of the teachers, I would refer them to the following list of books on Language, any of which will be sent on receipt of the price by the *School Bulletin*, Syracuse, N. Y.:—

Quackenbos's Illustrated Lessons in Language, published by D. Appleton & Co., New York, 60 cts.

Bigsby's Language Lessons, published by Ginn & Heath, Boston, 50 cts.

Swinton's Language Series, published by Harper & Brothers, New York, $2.15.

Graded Lessons in English, published by Clark & Maynard, New York, 50 cts.

Hadley's Language Lessons, published by Scribner, Armstrong & Co., New York, 50 cts.

Zander's Outlines of Composition, published by R. S. Davis & Co., Boston, 94 cts.

Barnard's Oral training, published by A. S. Barnes & Co., New York, $1.00.

Hailman's Outlines of Object Teaching, published by Ivison, Blakeman, Taylor & Co., New York, $1.00.

Sheldon's Lessons on Objects, published by Scribner, Armstrong & Co., New York, $1.75.

Welch's Object Lessons for Primary Schools, published by A. S. Barnes & Co., New York, $1.00.

How to Write a Composition, published by Dick & Fitzgerald, 18 Ann St., New York, 50 cts.

First Lessons in English Language, published by VanAntwerp, Bragg & Co., Cincinnati, 35 cts.

# LETTER-WRITING.

## INTRODUCTORY.

Good letter-writing is one of the main springs of business, and one of the strongest connecting links of common life. It were to be wished that more attention were paid to the subject of letter-writing in our schools. In the present day, when ignorance is deservedly at a discount, and when so much is expected of every one, even in a humble position in life, there is no reason why letters should furnish so many examples of outrageous grammar and absurd diction.

A habit of expressing oneself distinctly, and ever without pretension, ought to be inculcated in early life.

When the difficulties of spelling have once been conquered, there will be little difficulty in enabling the pupil to acquire such simple forms of letter-writing as are necessary to the ordinary correspondence of business.

In reference to the more polite correspondence, we do not suppose it can be of any great use to those whose personal gifts have been carefully improved by education, for "true ease in writing," as Pope says, "comes by art, not chance."

But to many, whose opportunities have been less brilliant, a few suggestions may be offered which may prevent being at a loss how to begin, or how to state a particular topic, and which, if not leading to the production of a good letter, may at all events prevent anything like positive awkwardness or inelegance.

Greater attention will be given to the mechanical structure of a letter than to its literary finish.

Those who wish to carry the subject to a greater extent, may receive aid from works upon *Language* and *Letter Writing.*

The chief *end* and *aim* of this chapter on Letter-Writing, is to give a correct guide in the matter of mechanical detail and in the combination of the parts of a letter. It is hoped that this subject will receive attention, and that all the pupils who are not THOROUGHLY FAMILIAR with it, may be taught HOW TO WRITE A LETTER. It is of more importance than the thousand-and-one facts taught in Geography, that are *readily forgotten;* or the discipline received from multiplying x + y by x + y.

# DEAD LETTERS.

**A Pathetic and Ridiculous Array of Stray Mail Matter.**

(Washington Correspondence.)

One can hardly realize that there is a daily average of 12,000 or 15,000 dead letters, or about 400,000 a month. Allowing one person to a letter, there are 400,000 persons every month who undertake to send letters either without stamps, without addresses, or with cancelled stamps, insufficient postage, illegible or incorrect addresses. Many of them are without either stamp or address, and often with no signature which gives the slightest clue to persons sending them. There are 40,000 a month received that either lack postage or address, or else have insufficient or cancelled stamps, and, strange as it may seem, these are sometimes the most valuable letters, often containing currency or drafts for large amounts of money. It is estimated that there is about $3,000,000 in drafts and about $75,000 in cash received yearly through dead letters. This is all returned, if possible, to the persons sending it; but if any portion of it fails to find a claimant, it is turned over to the Post Office fund.

Very little difficulty is experienced in restoring the checks and drafts to the rightful owners, but the

money generally comes in small sums, and is usually sent in the most careless, haphazard fashion, and the loss of these small sums, and the ignorance or carelessness with which they are launched upon a journey, represent a deal of suffering and disappointment. Some hard working man may send $20, the savings of a month's labor, to his wife and little ones, whom he has had to leave behind him; but, alas, he is one of forty thousand who trust to Providence, without stamp or address, or else his writing or orthography are beyond mortal ken, and so the poor wife never gets the pittance which is her all.

The paradise of fools, "to few unknown," is the mental comment as one sees the many evidences of people's carelessness, foolishness and stupidity which are displayed at the Dead Letter Office Museum. Arranged in glass cases on the four sides of the room are all these waifs of travel, displayed with a view to their respective attractions, and suggestive of the treachery of postage stamps and the adverse fate which sometimes overtakes even mail bags. There is everything known to the useful and ornamental; everything not smaller than a thimble or larger than a stovepipe hat.

Such a pathetic array of might-have-beens, so eloquent of disappointments and blighted hopes! Locks of hair—there are whole switches of them—and as for photographs, we are told that there are forty bushels of them in the basement of the building. But fancy yourself the recipient of a nice parcel from the hands of the postman some morning, which upon

being opened discloses a live snake! Whether one would go into raptures or hysterics at such a treasure would be a matter of taste, I suppose. But, then, people do send snakes through the mail, and sometimes they come back to the Dead Letter Office for want of a claimant, and we see them leading a serenely spiritual existence in a glass jar among other stray postal curiosities. It is a fact that a postmaster once found a small live alligator disporting among the letters and papers in a mail bag.

It is very amusing to see the letters opened, and guess at their contents before they are brought to light. Three out of five from a bundle of unaddressed letters contained money, one of them a $5 note. Then there are such quantities of dress samples in letters. One would imagine that all womankind had discovered a language in the interchange of these scraps of dress fabrics. One half show their prosperity in bits of silks and satins, and the other half in slips of sixpenny calico, and it is only in the Dead Letter Office that they meet on common ground. Certainly every fifth letter contains a photograph, and I don't imagine that any great care is taken to return lost photographs; but any one so bereaved has the privilege of rummaging among the forty bushels of human "counterfeits" which have accumulated here.

During November, 1876 more than 400,000 letters, newspapers and postal cards, were received for delivery by the letter carriers of New York city, of which 20,000 were returned by them as unde-

liverable on account of incorrect and illegible superscriptions. Four million and a half accumulate annually in the United States.

From the above statistics, and the testimony of many postmasters, it is evident that it is the imperative duty on the part of the teacher, to give instruction in Letter Writing. Considering the carelessness of the average American in the matter of directing letters, this fact does not speak well for American teachers.

It has been taken for granted, that pupils, who could parse and analyze a simple sentence, bound the states and territories, and explain an example in cube root, could write a passable letter ; but *this is a mistake.* A majority of our pupils are only able to *do* what has been taught to them, and that *thoroughly.* It is not enough to say to your pupils "that you should be able to write a good letter ;" you should teach them HOW TO WRITE A LETTER.

## HOW TO TEACH LETTER-WRITING.

*I. Directions,—*

1. Develop every part of the letter.

2. Illustrate and explain each part on the board.

2. Require pupils to copy the correct form.

4. Require pupils to reproduce each part.

5. Carefully examine the pupils' work.

6. After all the parts of the structure of a letter have been taught *thoroughly*, and the pupils have been *drilled sufficiently*, require them to reproduce the whole correctly.

7. Teach them how to place the superscription upon the envelope, and require them to hand in a letter properly written, folded, inserted and carefully superscribed.

## LETTER-WRITING.

*Classification of Letters.*
- I. Private
  - 1. Social. - *a.* Domestic. *b.* Introductory, etc.
  - 2. Business - *a.* Personal. *b.* Official.
  - 3. Miscellaneous.
  - 4. Postal Cards.
- II. Public, or Open.

### Structure of Letters.

**A.** Materials.
- 1. Paper. - *a.* Size. *b.* Quality. *c.* Color.
- 2. Ink—Color.
- 3. Envelopes. *a.* Size. *b.* Color.
- 4. Pen.

**B.** Heading.
- I. Position and Arrangement.
- II. Parts.
  - 1. Place
    - 1. Post-Office. - No. / St.
    - 2. County or City.
    - 3. State.
  - 2. Date.
    - 1. Month.
    - 2. Day of the Month.
    - 3. Year.
- III. Punctuation.

**C.** Introduction.
- I. Position and Arrangement.
- II. Parts
  - 1. Address. - 1. Name & title / 2. Directions.
  - 2. Salutation.
- II. Punctuation.
- VI. Model - 1. Business. / 2. Social & Miscellaneous.

**D.** Body of the Letter.
- I. Beginning.
- II. The Margin.
- III. Paragraphing.

**E.** Conclusion.
- I. Position and Arrangement.
- II. Parts.
  - 1. Complimentary Close.
  - 2. Signature.
  - 3. Address.
- III. Punctuation.

**F.** Folding.

**G.** Superscription
- I. Position and Arrangement.
- II. Parts.
  - 1. Name and Title.
  - 2. Directions
    - 1. Postoffice
    - 2. County.
    - 3. State.
- III. Punctuation.
- IV. Legibility.

**H.** Stamps.
- 1. Place.
- 2. How put on.

"How shall I teach the pupil to write a letter?" Try the following method :—Ask him,—

1. What are you going to write about? Get the real fact or incident, and have him write it down in proper form, as his *subject.*

2. What is the *first* thing you wish to tell about? Tell him to write that down by itself, as he wishes to tell it. Proceed thus, with the several items, 2d, 3d, and so on, till he thinks of nothing more. So far, you have the material. Now for the order. Ask him,—

3. Which of these really ought to come first? If he hits on the right one, have him number it 1. If he is wrong, point out the right item. Proceed in the same way to find the proper second item, and so on to the end. This settles the order. Now consider the paragraphs. Ask,—

4. Which of these seem to belong together in a group? Have them numbered a second time, as ¶ 1, 2. etc. Show the proper method for spacing the first lines of paragraphs. Attend next to the expression. Ask,—

5. What ungrammatical words or expressions do you find? Whatever such he finds, correct by interlining. Such as he fails to find, point out and have corrected.

6. What long words can be changed for short, simple words, or those in better taste? Have the changes made by interlining. Next, consider the capitals and punctuation. Ask,—

7. What words should begin with capitals? Have these marked.

8. Where do we want a full separation? Have the period inserted. And so proceed, if other points are needed.

Now require a complete draught to be made. When this is done, examine and correct it under the pupil's close observation, explain the corrections made. Lastly, require a carefully written copy according to the corrections.

### Classification of Letters.

The classification given in the tabulation should be written on the board and explained by the teacher.

The names of the classes are so plainly descriptive as to render formal definitions unnecessary.

### Structure of Letters.

This means an arrangement of its several parts, so as to present a pleasing appearance.

### Materials.

PAPER.—The materials for letter writing should be of good quality. Good materials cost only a trifle more than poor ones. The paper for business correspondence should be white or tinged with blue. The size of the paper should be adapted to the size of the envelope to be used.

In business correspondence, it is not in good taste to use tinted or colored paper.

INK.—Avoid the use of all fancy inks, and use simple black; all other colors fade.

ENVELOPES.—Do not use envelopes of irregular and fancy shape, and let them be adapted in size and color, to the paper.

SEALING-WAX.—This is now principally used on valuable letters and packages. It adds very much to the appearance of a letter to seal it neatly with wax.

### Heading.

The heading includes the place and date. If your letter is to consist of one page only, the proper position for the heading is on the first line. If less than one page, proportionally lower; so that the space at the bottom of the page may be equal to the space at the top. Begin the heading a little to the left of the middle of the page, and if it is too long to be placed within the limit of a half line, let it be extended for completion to the next line below. It usually occupies two lines, but never more than three; when two lines are used the second should begin farther to the right than the first. Business letters should always be dated at the top; some place the date at the bottom; this form is used more generally in social correspondence. When placed at the bottom it must be near the left edge of the paper, one line below the signature.

PLACE.—The Heading of a letter should be self-explaining. The name of the State and the County should always be expressed, unless the letter is addressed to a very large city, like New York or Boston. If the letter is written in a city, the street and number should be expressed. The Heading should be *full* and *complete*, so that when a person answers the message, he may know where to send it.

DATE.—The date includes the month, day of the month, and the year; if letters are used after the

figures, let them be placed on a line with the figures, and not a little above the line. The best letter writers omit the letters after the figures, although it is by no means improper to use them.

PUNCTUATION.—The parts of the Heading should be separated by commas, and a period should be placed at the close of the Heading and after abbreviations. The ordinal adjectives 1st, 5th, 27th, are not abbreviations, and they should be followed by a comma. The Heading is an abridged form of a sentence, composed of phrases, and phrases are usually set off by commas.

### REMARKS.

The teacher should write, or have written, on the board the correct form of the Heading of a letter, calling attention to the position and arrangement of the parts, capital letters, and punctuation. He should require the pupils to copy the correct form on their slates, spell the words, and give the correct position and arrangement of all the parts.

Various Headings should be given by the teacher until the pupils are thoroughly familiar with them. A few lessons methodically given, will SECURE MASTERY.

### Introduction.

*Position.*—The names of the persons to be addressed should be given on the line below the heading, at the right and near the marginal line. It may occupy one, two, or three lines; the first line of the address should contain the name and title alone; it should begin even with all the lines of the page, ex-

cept the heading and those that commence paragraphs.

*Directions.*—The directions should be as full in the address as in the heading ; the letter should be self-explaining ; it should contain not only the name and residence of the writer, but also the name and residence of the person to whom it is written.

The American form of correspondence places the address before the salutation, except in letters of an official character ; then it is placed at the close of the letter, at the left of the signature : this corresponds with the English style.

### Name and Title.

The name should be written *in full ;* for example, we write to J. C. Knox, Colorado Springs, Colorado; as it stands now it may mean James C. Knox or Jennie C. Knox. It is better, unless the party is well-known, to write the full Christian name, and not the initials of the name. *Too much pains* cannot be taken in the address of letters and the superscription of envelopes. In New York city there are two hundred persons by the name of John Smith ; in order to avoid confusion and allay the passion of mail carriers, it would be better for *all correspondents* to write the *full name*, the *proper title* and the *name* and the *number* of the street.

Title.—The common titles are Mr., Mrs., Miss and Esq. Mr. is an abbreviation of Mister ; Mrs. is an abbreviation of Mistress, but pronounced *Misses*, which is written *Mrs.;* Miss is not considered an

abbreviation, but a contraction, from the word *Mistress.* When this title is applied to two or more ladies of the same name, both forms are used by grammarians, *Miss* and *Misses;* the latter may be considered as the prevailing usage. *Esq.* is an abbreviation of *Esquire.*

SALUTATION.—This term should never be omitted; it expresses politeness, respect or affection. The term employed in writing to a man is *Sir*, *Dear* Sir, or *My* dear Sir.

The word *Dear* implies that the parties are acquainted; *My dear* Sir, suggest *intimacy* or *friendship.*

In addressing a married woman, the following form is usual, including the title and christian name of the husband:

Mrs. Dr. J. J. Anderson,
105 Madison Avenue,
Albany, N. Y.

Madam,—

In the use of the salutation, it is better to be *too formal* than *too familiar.*

To use a term of affection when no endearment exists between the parties, is highly improper. It is assuming undue familiarity, not warrantable in business correspondence. Such a term prefixed to the name addressed as, *Dear* Brown, or *Friend* Hayes, or even *Dear* Sir, or *My dear* Sir, is not proper in business messages.

The salutation used in addressing a woman married or a single woman, is *Madam*, *Dear Madam*, or *My dear Madam.* In writing to a young unmarried

lady, it is customary to omit the salutation and address her with the title prefixed to her surname, as *Miss Howell*, and then write the address at the bottom of the letter, at the left.

J. Willis Westlake says, "In writing to a lady who is a stranger or a mere acquaintance, persons often feel a delicacy (unnecessarily so, it seems to us,) about saying 'Dear Miss Blank,' or 'Dear Madam.' *Dear* does not mean any more in 'Dear Miss,' than it does in 'Dear Sir.' Surely no lady would hesitate to use the latter form of address in writing to a gentleman of her acquaintance; and the gentleman would be a fool to suppose she intended to make love to him by so doing. When Miss or Dear Miss is used in the introduction it must be followed by the lady's name; as 'Miss Flora May,' 'Dear Miss Barnes.'"

We should use the full form in the salutation ; as, *Gentlemen*, not *Gents; Sir*, not *Sr* ; *Dear*, and not *Dr.*

Place of the Salutation.—The salutation should begin at the same distance from the marginal line as the paragraphs.

If the address is omitted at the beginning of the letter, the salutation should be placed on the first line below the heading, a little to the right of the margin, so that the places of beginning the paragraphs may be uniform and correspond to the salutation.

Punctuation.—Place a period at the end of the address. The address and the salutation are not in the same grammatical person, the address being in the third person, and the salutation in the second.

Authorities disagree about the punctuation mark after the salutation.

Some place a colon ; some a semi-colon ; and others a comma. The best authorities use the comma, when the body of the letter begins one line below the salutation, and a comma and a dash when the body of the letter begins on the same line as the salution. In the English form of letter writing, the salutation, simply, is placed at the beginning of the body of the letter, and the address at the close of the letter, a little at the left.

This form is used in America by correspondents, and it is believed that the best usage sanctions it.

MARGIN.—Always preserve a margin in letters, and in all forms of manuscripts. The French preserve two margins, one at the left, and one at the right; this adds to the appearance of the letter, making it correspond to the printed page; in America only the left margin is retained. The introduction to social and miscellaneous letters, in form, is just the same as in business letters.

## REMARKS.

All of the above points in the introduction of a letter, should be neatly written on the board. The teacher should call attention to each part, its exact form and place.

He should require the pupils to copy the correct form on their slates ; and upon review, require them to spell the words, give the correct position and arrangement of all the parts, and punctuate the introduction correctly. At this point in the instruction review the heading and the introduction.

It is delightful to be able to write a good letter, and

it is certainly a great pleasure to read one. Surely, in this, like every other accomplishment, "practice makes perfect," and as it is a valuable one, the pupils should at once set to work with a determination to conquer the difficulties of writing.

## THE BODY OF THE LETTER.

The body of the letter is composed of two parts, properly; the *Beginning* and the *Paragraphs*. It is the message itself, exclusive of the *heading*, introduction and conclusion.

THE BEGINNING.—When the address occupies two or more lines, the body of the letter should begin directly after the salutation, and on the same line; when the salutation is simply used at the beginning of the letter, the body of the letter should begin on the next line below, little to the right of the salutation.

The salutation should never be placed so far to the right of the sheet of paper, as to leave room for only one or two words after it.

### Paragraphing.

The same rules should govern us in writing, as in printing, with the exception of the right margin. The paragraph should always be used, when necessary. It indicates the beginning of a new subject, or of different and disconnected things.

The first word of a paragraph begins farther to the right than the beginning of the other lines. The first word of the first paragraph commences after the salutation; the first word of the second paragraph should fall directly under the salutation, and so on with the

remaining paragraphs. All paragraphs should begin at the same distance from the marginal line. Preserve this order and it will add to the mechanical structure of the letter.

## THE CONCLUSION.

The conclusion of a letter is the part added to the body of the letter.

Position and Arrangement.—It should be placed at the foot of the letter.

Complimentary Close.—This includes the language, the closing compliments; it should begin a little to the right, but near the middle of the first line below the body of the letter, about the same distance from marginal line as the heading. They may be broken into two lines, but it is not necessary.

If composed of two lines, the second should commence a little to the right of the first; commence the first line with a capital letter, also the second.

Signature.—In writing the signature, begin a little at the right of the complimentary close, on the next line below. A letter should always be signed in a legible hand, and this includes accuracy, symmetry, uniformity and neatness. The full name should be written. Thousands of letters are dropped into the post offices having no name subscribed. It is well to write the address under the signature if you wish an answer to your letter; particularly if your letter is mailed at some other point aside from your regular residence.

Punctuation.—A comma should be placed after the complimentary close, and a period after the signature.

FOLDING.—Neatly folding a letter will add very much to its appearance. This is a simple thing, but it should be learned.

NOTE-PAPER.—Fold up the bottom so that it shall be nearly equal to the width of the envelope, (supposing that the envelope is adapted to the paper,) turn down the top in the same manner, and press the folds neatly together.

LETTER-PAPER.—Turn the bottom edge up so that it shall be nearly equal to the length of the envelope; then proceed in the same manner as above.

This form may be observed in folding for an ordinary envelope; if the letter is to be enclosed in an official envelope it must be folded thus: Turn up the lower edge equal to the width of the envelope, and fold the top down over it

## SUPERSCRIPTION.

We have finished the letter and are now ready to superscribe it. This *superscription* is written on the outside of the envelope. It consist of the name and title, post-office, county and state.

POSITION.—Every item must be on a separate line. The first line consisting of the name and title, should begin below and at the left of the centre; the second should begin a little farther to the right; the third a little farther than the second, and so on.

The spaces between the lines and the space below the last, should be equal.

Great pains should be taken in writing the *superscription*, and the full form should always be used. Each part should be written legibly. It is always

the safer way to express the name of the county unless the letter is directed to a large city.

PUNCTUATION.—Place a period after abbreviations; when the abbreviation is at the end of a line, place a comma after each line, and a period at the close.

### Stamp.

A stamp should always be placed upon the envelope. It should be placed upon the upper right-hand corner, about a sixteenth of an inch from the upper and the right edges. Pains should be taken to put it on carefully.

## PRACTICAL HINTS IN LETTER WRITING.

Thus far in the discussion of the subject of letter writing, we have called attention to the structure of the letter, the mechanical part. Simple as it may seem, it will require study on the part of those teachers who are not familiar with it. There are two other divisions important in themselves, the Rhetoric of Letters and the Literature of Letters, which should be made a study, if the teacher is not already familiar with them.

We cannot give an extended discussion of the above named divisions, but will throw out a few *practical hints*, calling attention to the *Rhetoric* and *Literature* of Letters.

INTERLINEATIONS.—This is a habit, and must be overcome. The insertion of letters or words exhibits to the reader a degree of carelessness, that is not excusable.

Copy and re-copy, until every part of the letter

pleases the eye. An hour or two devoted to careful copying will secure the result.

BLOTS.—Never allow a blot to be seen in your letters; it is slovenly.

FLOURISHES.—Avoid flourishing in letter writing; it is indicative of a kind of dash-and-display character. A person of this stamp would be quite apt to wear an Alaska diamond pin, alligator boots, steel-pen coat, part his hair in the middle and use a slim cane.

CROSS-LINES.—If it is necessary to write more matter than can be properly placed on the pages of a letter, use another sheet of paper. There is no excuse for the person to write on the margins of the sheet and over the body of the letter. It is in very *poor taste*, to say the least.

UNDERLININGS.—In reading, certain words are emphatic, and when properly emphasized increase the intensity of the thought.

In *writing*, it also adds force to the expression to to underline certain words; but indiscriminate underlining ceases to add effect.

## Erasures.

Avoid erasures; it indicates a lack of interest and attention to the subject. The same rules should hold good in writing as in printing.

It disfigures the letter and it is a sign of carelessness, and it is always the better way to REWRITE the letter, if there is time, than to send it subject to the criticisms of others.

### Postscript.

This is something added to a letter after it is properly finished, and should generally be avoided.

When the writer has received new information after the letter is finished, it may then be added. It is not best to get into the habit of appending postscripts. No topic of importance, compliment or affection, should be expressed in the postscript.

### The Character &.

The character & may be used between the surnames of a business firm or between the initial letters of Christian names; but as a rule it should not be employed to take the place of the word for which it stands.

### Figures for Words.

Figures are used for dates, time of day, rates, quantities, prices, and in bills, book-keeping, aggregate amounts, etc. In commercial paper it is best to use both figures and words.

### Lead Pencil Writing.

Business letters are generally preserved, and as lead pencil marks are easily blurred or erased, it is not business-like to use the lead pencil in correspondence.

### Bombast.

Use the simplest terms; descriptive words and fine words are not used by educated people: young persons do not like to use simple nouns, but resort to the use of adjectives, high sounding words, pompous expression and parade of language.

The language of simplicity should characterize all correspondence.

### Slang Words.

The words we use are an index to the mind and heart. Your letter will be accepted as a type of your mind and an index to your thoughts. No gentleman or lady will resort to the use of slang terms. Slang phrases are utterly inconsistent with true dignity of thought, word or deed.

### Foreign Words.

It is not considered a good taste to use foreign words, unless necessity requires them. It is better to use pure English.

### Tautology.

This is quite common with inexperienced writers; when a fact has been stated once,—the point made distinctly and clearly, it only confuses the idea, to attempt a repetition.

### Books on Letter-Writing.

Analysis of Letter Writing; Ivison Blakeman, Taylor & Co., New York. $1.50.

How to Write Letters, Sower, Potts & Co., Philadelphia. $1.00.

# MODELS OF HEADING.

**Model 1.**

*Albany, New York,*

*June 10, 1877.*

**Model 2.**

*Amsterdam,*

*Montgomery Co., N. Y.,*

*June 11, 1877.*

**Model 3.**

*Vassar College,*

*Poughkeepsie, N. Y.,*

*March 21, 1877.*

**Model 4.**

*870 Madison Ave., Albany,*

*June 22, 1877.*

**Model 5.**

22 *Clinton Street,*
*Troy N. Y., May* 11, 1877.

# MODELS OF INTRODUCTION.

**Model 1.**

*Messrs Smith & Perkins,*
*24 Exchange Street,*
*Rochester, N. Y.*

*Gentlemen:*

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**Model 2.**

*Messrs. Lord & Taylor,*
*540 Broadway,*
*New York.*

*Dear Sirs, Your favor, etc.*

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**Model 3.**

*William Witter,*
*Syracuse, N. Y.*
*Respected friend,—I have the honor, etc.*

**Model 4.**

*Miss Minnie Bell,*

*Providence, R. I.*

*We are in receipt of*

*yours, etc.*

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**Model 5.**

*Mrs. Julia R. Rumsey,*

*Dear Madam,*

*Your kind favor. etc.*

## ENGLISH INTRODUCTION.

**Model 1.**

*Dear Sir,—*

*Yours was received, etc.*

*Mr. James Doe,*
*25 Benton Street,*
*Albany, N. Y.*

**Model 2.**

*Gentlemen,—*

*Send me* 500 *barrels of Sugar, etc.*

*Dexter & Jones,*
*21 Broadway,*
*Albany, N. Y.*

## CONCLUSION.

FOR SOCIAL LETTERS, the following forms are used:

*Your friend; Yours with esteem; Yours very respectfully; Yours very sincerely, etc.*

FOR BUSINESS LETTERS, the following forms are used:

*Truly yours; Yours respectfully; Yours very truly; Yours.*

FOR OFFICIAL LETTERS:

*I have the honor to be, Sir,*
*Your obedient servant,*
*C. L.*

*I have the honor to be,*
*Very respectfully,*
*Your most obedient servant,*
*H. C. D.*

*I am, Sir,*
*Your obedient servant,*
*S. H.*

*Very respectfully,*
*Your obedient servant,*
*S. A.*

## FORM FOR SOCIAL LETTER.

*Canandaigua, New York.*

*My dear Sister,—*

*In reply to your letter of the* 18*th inst. I beg to assure you that I shall be happy to meet you on Wednesday next at Albany, at the hour mentioned by you.*

*We are pleased to know that you will visit us.*

*Your loving sister,*

*Mary Perkins.*

*Miss Lula Perkins,*
*Gorham Street,*
*Canandaigua.*

## BUSINESS LETTER.

*Albany, N. Y., May* 28, 1877.

*Supt. O. B. Bruce,*

*Binghamton, N. Y.*

*Sir,—Yours of March* 16*th was duly received. It gives me pleasure to inform you that I shall be able to accompany you on the proposed excursion next August.*

*Yours very respectfully,*

*William Watson,*

288 *Madison Ave.,*

*Albany, N. Y.*

FORM OF SUPERSCRIPTION.

*Mr. Ezra Witter,*
*Seneca Falls,*
*New York.*

*Miss Anna W. Lee,*
*505 5th Avenue,*
*New York.*

*Messrs. Smith & Perkins,*
*25 Exchange St.,*
*Rochester.*

*Miss Grace Reynolds,*
*Batavia,*
*New York.*

*Genesee Co.*

*Colorado,*
*Colorado Springs,*
*James Knox.*

# ARITHMETIC.

## INTRODUCTON.

In order to teach arithmetic successfully the teacher should have an idea of the subject as a whole. The most difficult part of the subject—as in all subjects—is the fundamental part ; and unless that is thoroughly taught, the after results will be unsatisfactory. It must be admitted that more time is given to the subject of mathematics in the schools than to any other study.

It is an important study, but it should not receive an undue proportion of time,—it should not be pursued at the expense nor to the neglect of other studies of equal importance, as language, reading, spelling, etc.

Nothing is gained by passing rapidly through the primary part. Pupils should be perfectly familiar with all the fundamental operations ; able to write numbers with five and six periods without hesitation ; add rapidly and accurately long columns of figures ; and perform all computations in the fundamental rules with dispatch. The first part of arithmetic should be simple, and the lesson should be given orally by the teacher. More attention should be given to the study of *processes* than to *analysis*—

*computation* comes first, then *calculation*. The subject should be presented in its *logical* order,—every part held up separately and individually, and the fact fixed in the mind.

When the truth is once understood, the pupil should be trained to work skilfully, thoughtfully and accurately.

Much reasoning should not be required of the pupils during the primary course. The aim should be to make them see *how to do*.

But little attention should be given to definitions; if used they should be fully understood and explained, otherwise they may be committed to memory, and this is not necessary during this period. The pupils should be able to explain the processes, but they should not be required to commit the rules to memory, nor the principles.

Definitions, rules and principles are deductions,—do not burden the children with these.

### The Science of Arithmetic Receives too Much Attention.

Definitions, rules and principles have to do with the science of arithmetic.

Thomas Hill, says, in his book, "The True Order of Studies," that "the science of arithmetic receives so much attention that the art is neglected." The primary object of arithmetic should not be to develop the reasoning power, but to make pupils skilful in computation.

He further says, that "A child should not be expected or required to reason at an early age. Any

direct training of the logical powers before the age of twelve years is premature, and in most cases, a positive injury to the pupil. The common sense view would give facts before reasoning. Reasoning upon facts is the work of a maturer mind." Granting this to be true, arithmetic is taught backwards in many cases; beginning with reason instead of observation.

For the reason above quoted rules and definitions should not be committed to memory until a later period.

### First Ideas of Number.

The teacher should begin the lessons in number with objects, using pencils, crayons, pebbles, books; also a numeral frame.

The object is to lead the children to the perception of the idea of numbers, as exemplified in surrounding objects.

The idea to be gained at first is that of *one*, as it is the basis of all arithmetical calculations.

The teacher should hold up one object before the class; as one pencil, one crayon, etc., until every child understands what is meant by one.

Tell the pupil that one is the word that expresses "the how many," the number.

After you have taught the word one, then teach the character that represents it.

"Develop the idea, then give the term; educate the eye, then employ the hand; cultivate the use of language, then exercise memory."

Pupils should not count one, two, three, etc.,

naming the abstract term; they should say one pencil, one crayon, one book.

Proceed in the same manner to teach two; by holding up two objects of different kinds. After they are made familiar with the number of objects, let marks be made on the blackboard; then the characters that represent the number of marks. Let children reproduce at their seats the work given at the board by the teacher.

### Value of Numbers.

At this point see that the pupils get the idea of the value of number, by comparing a greater group of objects.

### Order of Numbers.

Care should be taken to teach the order of numbers, so that the children can tell what number comes before and what after any given number. This may be illustrated with the class, or the picture of a ladder.

Teach the pupils in the same way to write numbers to 99. Give no instruction about units and tens, etc., until a later period.

Teach the subject so thoroughly that your successor will not be obliged to instruct in it.

## Numeration and Notation.

### THE UNIT.

The pupils have been taught thus far to deal with ones. They are now supposed to be familiar with numbers to 1000. They may now be taught that there is another name—unit, which means a single

thing—that may be used with the figures, as one unit, two units, etc.

THE TEN.

At this stage the teacher may provide several small sticks, about the size of matches. Take several sticks and let the pupils count ten ; tie these up in a small bundle and call it one ten ; proceed in the same manner until ten bundles have been made ; now let them count the bundles. Next let them see that one bundle contains ten sticks, or ten units, or ten ; two bundles, twenty sticks, or twenty units, or twenty ; and so proceed until you reach the hundred.

Write numbers on the board to correspond to the object and groups ; let them read the numbers, as one ten and one unit, one ten and two units ; twenty, two tens ; thirty, three tens, etc.

**Notation.**

When the pupils can readily read columns of units and tens, they may be required to write these numbers on the slate. The teacher may dictate the numbers. Let them write numbers below 100, and ask them what they used to write the number. For example, write 86. How did you write it ? With 8 tens and 6 units, etc.

**Numeration.**

They have been already taught that ten units make one ten ; and ten tens make one hundred. Now let them read the numbers. For example 123 ; three units, two tens, one hundred, read 123 units. The teacher, after sufficient drill, should obtain bundles with 100 sticks.

Supplement these illustrations with dictation exercises, and so proceed until the pupils are made familiar and can write numbers readily from dictation on the slates and at the board, and read their values.

**Orders of Units.**

The pupils must have a clear idea that units may differ in size and value—that one of anything is a unit, whether large or small. One bushel is a unit; one dollar is a unit; one cent is a uuit. They have already been taught that numbers are built up of simple "ones," so far as 100; that each ten is considered as a whole, or 1 ten; that each hundred is regarded as a whole, or 1 hundred.

Now they are prepared to see what is meant by a unit of the first order, of the second order, of the third order, etc

This step is sometimes omitted in teaching number. It is a very important one; it should be carefully taught and the pupils thoroughly drilled upon it.

Let them see that it is the position of a figure in a number that determines its value.

Teachers are too ambitious in advancing pupils in arithmetic.

Some teachers will promote to higher classes pupils that could not pass an examination in notation and numeration. Frequently we find pupils ciphering in percentage, that fail in writing and reading a number of four figures. Never let pupils pass beyond the fundamental rules until they are familiar with them, and are able to readily apply them.

They will make slow progress in the advanced steps if this is not understood,—they will make rapid progress if it is thoroughly understood.

Teach so thoroughly that your successor may not be obliged to unteach what has been taught.

Too much pains cannot be taken with notation, numeration and addition, The law of increase and decrease may be thoroughly developed with these rules

Again we repeat, "not how much but how well."

### Adding.

OBJECTS.

Begin the subject in the same way as the first, with objects. Marks upon the blackboard may be used after the children have become familiar with adding objects. Use the numeral frame but see that the children do not confound counting with adding.

### Concrete Numbers.

Let pupils add concrete numbers without having the objects before them. When they become very expert in computation, let them add numbers concretely from one to fifty. The teacher should not leave this division of the subject until the children can announce the sum of any two concrete numbers that may be given, instantly. Confine the problems to numbers less than ten.

### Adding by Figures.

These exercises at first should be very simple: first, by adding one to all the numbers less than ten; then two; then three, etc.

After sufficient drill has been given, and the pupils can give instantly the sums of all numbers less than ten, proceed in the same way with all the decades to one hundred. This grouping of numbers will form a pleasing and profitable drill. Do not let the pupils add numbers in the following manner: For example, What is the sum of 8 apples, 7 apples and 4 apples? 7 apples and 8 apples are 15 apples; 15 apples and 4 apples are 19 apples. Rather have them say: 8 apples, 15 apples, 19 apples. Simply anounce the results and do not allow them to count.

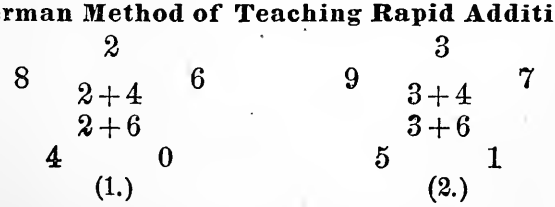
**Addition Tables.**

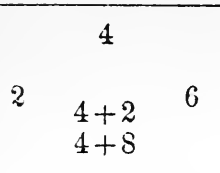
The teacher should see that the tables are thoroughly committed to memory by requiring pupils to recite them backward and forward regularly and irregularly. Excite emulation among the members of the class in regard to the mechanical execution of the work, because careless habits formed will ever be a source of annoyance to both teacher and pupil.

Construct the addition tables at first by the use of objects.

Great care should be taken that the pupils be not hurried over these early steps too rapidly. Teach the combination of only one number at a lesson. "Make haste slowly." Teach them to add rapidly and correctly.

**German Method of Teaching Rapid Addition.**



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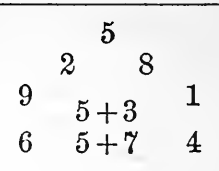


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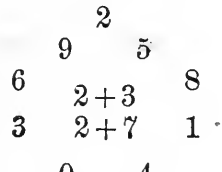


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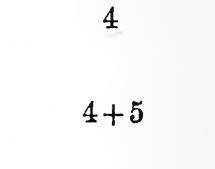


(6.)

In circle No. 1 begin with 2, add 4, and write the results about the circle. When the result exceeds nine, write the right hand figure only. Beginning with 1, passing to the right, we have the following: 2, 6, 10, 14, 18, 22, 26, 30, 34, 38, 42, etc.; again beginning with 2, passing to the left, we have the following: 2, 8, 14, 20, 26, 32, 38, 44, 50, etc.

In order to form the circular tables, take any number less than ten and add a number to it, and continue the successive additions until you repeat the first figure; write these numbers about the circle.

Begin with the number 1, and add the number to 10; and so on with each number.

This exercise will produce great ambition in the school, and all pupils like to take part in it. At first call on the pupils to recite in concert; subsequently, by dividual drill. Time them, and see how many seconds they will require to add 100. Only six of the tables are given; many others may be made by the teacher. The Germans have attained grand results through these circular tables. In connection with these exercises pupils should be required to add columns of figures; at first, short columns, with figures less than five; gradully increase until they become ready and rapid in computation.

An experience of eight years at institutes has revealed sad results in adding simple columns of figures. In many instances the teachers had not been taught to add properly in their youth, and I have frequently received twenty-five different answers to a problem like the following:

Add 8989, 7898, 7897, and 9876.

The pupils should be taught the combinations of numbers; combining the 4 and the 5 will always produce a 9; a 6 and a 5 a 1; 9 and 5 a 4; 8 and 5 a 3; 7 and 5 a 2, etc., and by a daily systematical drill the pupils will overcome this hesitancy, which is a common fault in American schools. No rule in Arithmetic is used so much as addition, and *great care* should be taken with primary classes.

We are thus *particular* and *emphatic*, concerning the early steps of mathematical education, because it is "the first step which costs." Much more labor is required to *unlearn* than to *learn*. The teachers

for the younger classes should possess particular aptness for imparting instruction. Such teachers deserve and should receive the *highest wages.*

### Analysis of Problems in Addition.

WRITTEN ARITHMETIC.

After the pupils have mastered the fundamental rules, and their reasoning powers begin to develop, the teacher should require an analysis of the problem.

The mechanical operation—the doing part, should not be confounded with the logical operation—the thinking part.

Problem in abstract numbers :

What is the sum of 8764,9789,5786, and 9843?

**Mechanical Part.**

8764
9789
5786
9843

34,182

**Logical or Analytical Part.**

*Analysis :*—I have written the numbers so that units of the same order stand under each other. For convenience I will begin at the right hand; adding the first order, the sum is 22 units. As ten units make one ten, 22 units are equal to 2 tens and 2 units ; I will write the 2 units in the order of units, and add the two tens to the order of tens ; and so pro-

ceed with each order, giving the reasons for every step.

Require the pupils to deduce the rule from the analysis.

**Analysis of Concrete Problem.**

*Problem :*—If a horse cost $120, and a wagon $110, and a harness $90, what will be the entire expense ?

*Anaysis;*—The entire expense will be the sum of $120, $110, and $90 ; equal to $220.

The simplest and the most concise analysis should be taught to the children. No unnecessary words should be allowed in the analysis of a problem.

**Subtraction.**

This subject should be taught as addition, beginning with objects. First, by taking away one object, then two, etc. After they have become familiar with this process, then use marks on the board, subsequently using concrete numbers without having objects before them. At first ask the pupils to answer in concert, followed by individual drill.

**Subtracting by Figures.**

After the children have become familiar with the preceding processes, the teacher may write numbers on the board as far as 9, and require the children to subtract one, then two, then three, etc. Vary the processes.

Subtracting by figures when the figure in the subtrahend is greater in value than the corresponding figure in the minuend.

Problem : Subtract 456 from 824.

**Mechanical Operation.**

$$\begin{array}{r} 824 \\ 456 \\ \hline 368 \end{array} \text{ or } \begin{array}{r} 7\ 11\ 14 \\ 4\ \ 5\ \ 6 \\ \hline 3\ \ 6\ \ 8 \end{array}$$

**Logical, or Analytical Operation.**

I have written the numbers as in addition, writing the subtrahend under the minuend.

Begin at the right hand to subtract. 6 units from 4 units I cannot take ; take 1 ten from the 2 tens and it equals 10 units ; 10 units and 4 units are 14 units ; 6 units from 14 units equal 8 units; write underneath in the units order

Five tens from 1 ten I cannot take ; take one hundred from 8 hundred and it equals 10 tens ; 10 tens and 1 ten equal 11 tens ; 5 tens from 11 tens equal 6 tens ; write it underneath in the tens order. Four hundred from 7 hundred leave 3 hundred, etc.

By this process it will be observed that the form of the minuend was changed without altering its value. The subtrahend in form remained unchanged. The teacher should see that the pupils understand that 8 hundred, 2 tens and 4 units are of the same value as 7 hundred, 11 tens and 14 units.

This is a simple analysis and easily understood.

*Second Analysis:*—I cannot take 6 units from 4 units ; will add 10 units to 4, equal 14 units ; 6 units from 14 units equal 8 units ; as I have added 10 units to the minuend, in order to preserve the equality, I must add 10 units or 1 ten to the subtrahend ; adding 1 ten to 5 tens equal 6 tens · 6 tens from 2 tens I can-

not take ; I will add 10 tens to 2 tens, equal to 12 tens ; 6 tens from 12 tens equal 6 tens ; as I have added 10 tens or 1 hundred to the minuend I must add 1 hundred to the hundreds in the subtrahend ; 4 hundred and one hundred are 5 hundred, and 5 hundred from 8 hundred leave 3 hundred. This is governed by the principle which says, adding equal numbers to both minuend and subtrahend does not alter the value of the remainder.

This analysis should be required in addition to the first, but not preferred to it.

**When there are Ciphers in the Minuend.**

*Problem :*—Subtract 456 from 1000.

**Mechanical Operation.**

$$\begin{array}{r} 9\ 9\ 10 \\ 1\ 0\ 0\ \ 0 \\ -\ 4\ 5\ \ 6 \\ \hline 5\ 4\ \ 4 \end{array}$$

*Analysis :*—There are no units in the units order, no tens in the tens order, no hundreds in the hundreds order. In 1000 there are 9 hundred, 9 tens and 10 units. 6 units from 10 units equal 4 units ; 5 tens from 9 tens equal 4 tens ; 4 hundred from 9 hundred equal 5 hundred. (The form of the minuend has been changed, but not its value.) Deduce the rule.

**Multiplication.**

As in the preceding rules, begin this subject with objects, and build up all the tables at first with objects.

### Analysis of a Concrete Problem.

*Problem :*—What will 40 books cost at $9 apiece?

*Analysis :*—Since one book cost $9, 40 books will cost 40 times $9, equal to $360.

The teacher should insist that the pupils use the *true multiplier* in all concrete problems. Too much attention has evidently been paid to the higher parts of arithmetic, to the neglect of the very elements. The teacher should see that the pupils analyze, or are able to analyze, every problem at this stage.

Arithmetic, if taught logically, is well calculated to develop the mental faculties ; if taught mechanically, as is often the case, a pupil may even pass through a book with but little thought. Drill upon the multiplication table. Require pupils to say it forward, backward and irregularly.

### Division.

Commence with objects ; ask questions as follows: What have I on my table ? *One apple.* How many times can I take one apple from it ? *Once.* What have I placed on my table ? *Two pencils.* How many times can I take one pencil from my table? *Two times.* Each may place one watch on his desk. How many times can you take one watch from your desk ? *Once.* Place three drums on your desk. How many times can you take three drums from your desk ? *Once.* How many times can you take one drum from the desk ? *Three times, &c.*

Place eight books on the desk. How many times can you take four books from the desk ?

How many times can you take two books? *Once, twice, three times, four times.* How many times can you take one book? *Once, twice, &c.* Place sixteen birds on the desk. How many times can I take four birds from them?

Place ten flags on the desk, and divide them into two equal parts; how many flags in each part? Place nine books on the desk, and divide them into three equal parts; how many in each part? Take away one part, how many *parts* will remain? Take away one part, how many books will remain? Place sixteen birds on the desk, and divide them into four equal parts; how many birds are there in each part?

By the use of oral abstract questions, thus: How many two's in 8? In 2? In 14? In 10? How many times can four be taken from 8? From 24? From 32? Twelve is how many times 2? How many times 4? How many times 6? How many times are four contained in 8? In 12? In 20? &c. Sixteen contains 2 how many times? Contains 4? Contains 8? &c. What is one-third of 9? Of 15? Of 21? Of 18? &c.

### Primary Arithmetic.

With the long established methods in arithmetic it seems impossible to advance anything that is new.

Some teach first the subject of addition, then subtraction, etc. Others begin with 1, and teach all there is to know about it before passing over to another number. Teaching for instance the number

1, they make the children perform all the operations possible within the limits of this number. The child has to see and to keep in mind that—

$1+1=2$, $1\times1=1$ $1-1=0$, $1\div1=1$, etc.

$2+1=3$, $3\times1=3$, $2-1=1$, $2\div1=2$, etc.

The whole circle of operation up to 2 was exhausted before the child progressed to the number 3, which was to be treated in the same way.

Why adhere to the more scientific categories of addition, etc, in the primary grade, where they do not help to make the subject any clearer to the child?

The first four process are naturally connected, and will appear so in the child's mind.

If you take away 1 from 2, and 1 remains, the child in knowing this also understands implicitly the opposite process of adding 1 to 1 and its result.

Multiplication and division are, in the same way, nothing but another way for adding and subtracting, so that we might say one operation contains, and may be shown to contain, all the others.

"You must teach the child to know the numbers in some way or other," but "to know a number really means to know also it most simple relations to the number contained therein." Any child who knows a number and its relation, must be also able to perform the operations of addition and subtraction, etc., with it, as they are the direct result of comparing two numbers with each other.

Only when the child can perform all these operations, for instance, within the limits of 2, can it be supposed really to have a perfect knowledge of this

number. This seems to be a rational method and worthy of a trial; it has proved superior in practice to the methods in use.

A full exposition of it may be found in Beebe's First Steps Among Figures, published by Davis, Bardeen & Co., Syracuse, N. Y.

### Pupils Must Acquire Clear Conceptions of Processes.

Acquaintance with the process is the first step towards practical skill in any operation; and the more intelligent it is, the sooner is skill acquired.

A knowledge of the process must precede any attempt to give theory or to supply a rule. Theory, in fact, implies that the conceptions it embraces are already in the mind, and the rule is universal that it springs from or is based on practice.

The process must be made clear by examples from experience, aided in every possible way by sensible representations, either objects, marks, or diagrams. When these have set forth the process, it should be made familiar by well-constructed examples to be worked mentally.

### Facility of Computation.

This, when a process is clear and intelligent, is a matter only of memory, and depends on practice. The two things to be secured are *accuracy* and *rapidity*. Some of the devices by which this important habit may be established, are, a thorough knowledge of all the tables, and much practice in computation.

### Written Analysis.

The teacher should require the pupils to bring in to the daily recitation a written analysis of one or two problems. The mechanical process also should be required, and the work should be neatly and correctly expressed. This work should be examined by the teacher, else the pupils will lose interest in its performance and become careless in the mechanical execution.

EXAMINE AND CROSS-EXAMINE THE PUPILS IN THEIR WORK, AND SEE IF THEY CAN GIVE A REASON FOR EVERY STEP.

### Suggestions to Teachers.

1. *We cannot impress too strongly upon the teacher's mind that each lesson in arithmetic must be at the same time a lesson in language. As the pupil in the primary grade should be generally held to answer in complete sentences with clear and distinct articulation, so especially in arithmetic, the teacher should insist on fluency, smoothness and neatness of expression, and lay special stress upon the process of the solution of each example. As long as the language for the number is not perfect, the idea of the number is also defective. An example is not done when the result has been found, but when it has been solved in a proper way. Language is the only test by which the teacher can ascertain whether or not the pupils have perfectly mastered any step.*

2. *Teachers should avoid asking too many questions. Such questions, moreover, as by containing half the answer, prompt the scholar, should be omitted. The pupil should do the talking as much as possible.*

3. *Every process ought to be illustrated by means of an application to objects. Finger lines, or any other objects, will answer the purpose, but objects of some kind should always be presented to the class.*

*By this method of teaching the pupil will not be able to pass over much ground, but what he does know, he will know thoroughly.*

*No new numbers should be commenced before the previous one is perfectly mastered. It would be a mistake to suppose that in teaching according to this plan, memory is not required on the part of the child. Memory is an important factor here, as it is in all instruction. I say this boldly, though I know with some teachers it has become almost a crime to say that memory holds its place in education. To have a good memory is, in their eyes, a sign of stupidity. Reviews must frequently and regularly take place, and, lastly, propositions must be thoroughly memorized.*

## Fallacies in the Analysis of Problems in the Fundamental Rules.

*Problem :*—James had five cents and he found seven more ; how many had he then ?

### Addition.

*First Step.*—James had five cents and he found seven more ; how many had he then?

*Second Step*—He had as many as the sum of five cents and seven cents.

*Third Step*—Five cents plus seven cents are twelve cents.

*Fourth Step.*—Therefore, if James had five cents, and he found seven more, he then had twelve cents.

Remarks.—In the above analysis,—as it is given in many schools—the pupils have used fifty-one words. No business man in solving this problem, would use this rigmarole of words. If the teacher repeats the problem, it is not necessary for the pupil to repeat it. There is no objection—that is, no plausible one—to the pupil's reading the problem from the book.

The great object sought for in the study of arithmetic, is to *develop* and *strengthen* the reasoning powers.

It is a positive injury to require pupils to commit to memory simple arithmetical problems, that are of no value whatever after the answer is attained.

We encourage teachers to use a simple concise analysis, instead of requiring pupils to commit to memory the formulas found in too many text-books. The following analysis is to be preferred, and it is used by experienced teachers :—

*Analysis.*

Since James had five cents, and found seven cents, he had the sum of five cents and seven sents, equal to twelve cents.

In this analysis we have used twenty-three words; in the first fifty one words. "Therefore," etc., at the close of a problem is an unnecessary repetition of words.

**Subtraction.**

*Analysis.*

*First Step*—A boy having seven marbles, lost five of them; how many had he left?

*Second Step*—He had as many left as the difference between seven marbles and five marbles.

*Third Step*—Seven marbles minus five marbles are two marbles.

*Fonrth Step*—Therefore, if a boy having seven marbles lost five of them, he had two left.

*Simplified Analysis.*

Since a boy having seven marbles lost five of them, he had left the difference between seven marbles and five marbles, equal to two marbles.

In the first analysis we have used fifty-two words; in the second twenty-five words.

**Multiplication.**

*Analysis.*

*First Step*—At seven dollars a pair, what will five pairs of boots cost?

*Second Step*—If one pair cost seven dollars, five

pairs will cost five times seven dollars; (or more frequently, seven pairs which are seven times one pair.)

*Third Step*—Five times seven dollars are thirty-five dollars.

*Fourth Step*—Therefore, at seven dollars a pair, five pairs will cost thirty-five dollars.

*Simplified Analysis.*

Since one pair cost seven dollars, five pairs will cost five times seven dollars, equal to thirty-five dollars.

In the first analysis we have used thirty-four words; in the second seventeen words.

**Division.**

*Analysis.*

*First Step*—If a man laid out one hundred dollars for cows, and paid twenty dollars for each one he bought, how many cows did he buy?

*Second Step*—If one cow cost twenty dollars, he bought as many cows for one hundred dollars as twenty is contained times in one hundred.

*Third Step*—Twenty is contained times in one hundred, five times.

*Fourth Step*—Therefore, if a man laid out one hundred dollars for cows, and paid twenty dollars for each one that he bought, he bought five cows.

*Simplified Analysis.*

He bought as many cows as twenty dollars is contained times in one hundred dollars, or five times. He bought five cows.

Some meet with difficulty in analyzing problems in division, when they consist of concrete numbers. Division is finding how many times one number can be subtracted from another of the same kind.

Dollars can be divided by dollars and by nothing else. Yards can be divided by yards, and nothing else, and so on for any other things that might be mentioned. That dollars can only be divided by dollars arises from the fact that division is but a short process of finding how many times one number or quantity can be subtracted from another, and we can subtract only dollars from dollars; therefore we can divide dollars only by dollars.

*Example*—Divide $42 equally among 6 men. Now we cannot divide $42 by 6 men nor by 6; but if we give each man a dollar, that will require $6, and $6 can be subtracted from $42 seven times. Hence we can give each man a dollar seven times, or we can give him $7 at one time.

After the operation is performed, we may call the 7, seven dollars; then the 6 will be a mere number, and thus, indirectly, we may divide $42 by 6.

Practically, however, all such operations are performed abstractly, as 42, 6, 7, taken as mere numbers, and then mere logic decides upon the names.

### Order of Solving Problems.

1. Require the pupils to state the conditions and the demands of the problem.
2. Logical operation or analytical steps.
3. Mechanical operation.
4. Analysis.

5. Conclusion.
6. Deduction of the rule.
7. Definitions.
8. Tabulated review.

The study and solution of examples and their discussion in the class involve the following points :

1. Correct reading.
2. Examination preparatory to solution.
3. Analysis and solution.
4. Retracing steps
5. Readiness in solving and explaining problems.

**Proper Results of Arithmetical Study.**

Results.
- 1. Mental discipline
  - 1. Correct perception.
  - 2. Repetition.
  - 3. Practice.
  - 4. Attention.
- 2. Practical business preparation.
  - 1. Accuracy.
  - 2. Expertness.
  - 3. Rapidity.
- 3. Preparation for advanced study.

**Cautions to be Observed in Teaching Arithmetic.**

1. Present single ideas, single facts and single difficulties.
2. Call up each point in the lesson frequently.
3. Teach simple processes.
4. Keep the mind in an active state.
5. See that pupils get a clear perception of principles.
6. Fix and hold the attention.

### Mental Arithmetic.

There should be no difference between the analysis of a problem in mental and in written arithmetic. The only difference between the two books is that the mental arithmetic contains problems in which the computation may be performed mentally, without recourse to written symbols; also, the answers are not expressed. It is a fact that those pupils who have been trained carefully in mental arithmetic, take up the principles of higher mathematics more readily. The language used should be sufficient to render the solution of the example clearly intelligible to a listener, yet so brief as not to retard, unnecessarily, the process of mental calculation. The mental arithmetic should both precede and accompany the written arithmetic, step by step. In fact it would be much the better way to select a text-book that contained exercises in both the mental and the written arithmetic. In mental arithmetic the language should be clear, and the words enunciated distinctly. No hesitancy should be permitted—pupils should pass through the solution rapidly. Pupils should be required to construct original problems, and random exercises should be given by the teacher in addition, subtraction, multiplication and division, to teach rapidity and accuracy in computation.

The teacher should give problems of a practical nature to the class.

### Written Arithmetic.

There is a great deal of perfectly barren mathemrtical knowledge in this country, particularly

among those who have studied, not for knowledge, but for a certificate or a diploma.

Not unfrequently do we meet with teachers who can demonstrate problems in Algebra and Geometry, who at the same time cannot make the least application of them. Again, we have met teachers who have graduated at the higher institutions of learning, who have passed over the rules of arithmetic—finished the study—who would fail to solve a problem like the following:

How many feet in a board 12 ft. in length, and 12 inches wide?

They seem to be unaware that the rules of arithmetic were ever intended for any practical use.

### Such Knowledge of Doubtful Utility.

Knowledge, so confined and abstract, is of doubtful utility, even as a mental discipline. Both theory and practice should be united, or else we preceive nothing of the beauties of mathematics. "Detached propositions and abstract mathematical principles give us no better idea of true and living science than detached words and abstract grammar would give us of poetry and rhetoric." Small acquirements in mathematics serve only to make us timid, cautious and distrustful of our own powers—but a step or two further gives us life, confidence and power.

### Should We Study Mathmatics for the Discipline of the Mind?

The mere study of the mathematics will give but little discipline. The object, and the only object,

should be to understand the subject studied, and if that understanding is attained, the highest mental discipline that the subject can yield will surely be attained.

Those who study for an object so indirect and indefinite can never be decidedly successful. And those who teach with no other view than giving discipline to the minds of their pupils, never more than half teach.

Let a person undertake the study of any science with no other object than the discipline of the mind, the science will come to him with the utmost difficulty. But let him commence the study with the determination to understand it, and the science will come to him with ease, and with it will come a discipline of mind, the most pure and lasting that man can attain.

**Objects Sought.**

The objects sought in arithmetical study should be two-fold,—to give practical skill, including clear insight into processes, facility in computation, and readiness in dealing with practical problems; and to make it an exercise in exact thinking. The former is considered the primary object, because demanded by the requirements of the pupil, who is at school to be fitted for business; but the latter as securing a higher discipline of the mind, and as giving a clearer insight into the nature of the work, is of almost equal value. In pursuit of the former object, the teacher will succeed the best who tries to make the whole course of instruction and practice disciplinary.

### Logical and Mechanical Steps.

In the application of arithmetic there are two distinct operations, the logical one and the mechanical one.

In too many schools greater attention is given to the mechanical; to some extent this is quite necessary, and pupils should be made very familiar with elementary processes. But after they become expert in computation, greater attention should be given to calculation,—the thinking The undisciplined direct their attention more to the doing than the thinking, when it should be the reverse; and nearly all the efforts of the good teacher are directed to make his pupils reason correctly. If a person fails in an arithmetical problem, the failure is always in the logic, for false logic directs to false reasoning, and true logic points out true operations.

The study of mathematics is a beautiful one, and if taught properly it accustoms the mind to habits of investigation; if the knowledge is digested and assimilated, it tends to produce an exact mind.

Pupils should be able to explain the processes, but they should not be required to commit to memory the rules or principles.

### Questions as to Intellectual Arithmetic.

Is it absolutely established by fact and theory that no harm results from requiring pupils to repeat verbatim the examples in intellectual arithmetic,—said examples having been first enunciated by the teacher, the pupils having no books?

It is suggested from the following considerations, whether harm does not result :

*First*—Does not the requirement cultivate spasmodic or momentary effort to retain the words, and thus lead practically to the habit of forgetting them, thus developing a most pernicious habit of forgetting other facts that are important to remember?

*Secand*—Does not the requirement so tax the recollecting powers of the pupil that his reasoning powers must necessarily be less active, and hence less developed?

*Third*—Is not the great object sought for in the study of mathematics, to develop and strengthen the reasoning powers ?

*Fourth*—Is not that one best disciplined mentally who is able to attend to and follow his own mental powers or operations in his process of reasoning?

*Fifth*—Does the requirement to memorize tend to strengthen or develop the habit of analytical reasoning?

*Sixth*—Is it not a positive injury to require pupils to commit to memory simple arithmetical problems that are of no value after the answer is obtained?

*Seventh*—Cannot a verbal memory be far better cultivated by requiring pupils to commit facts, words it may be, that are absolutely necessary to a correct scholarship?

## Fractions.

The term UNITY in mathematical science is applied to any number or quantity regarded as a whole ; the term UNIT in arithmetic, to any number that is used as the base of a collection

Every number, either integral or fractional, has the unit 1 for a primary base.

A quantity regarded as a whole, called a *unit*, is the *primary* base of every fraction.

One of the equal parts of a unit called the *fractional unit*, is the *secondary* base of every fractional number.

The value of a fraction is the number of times it contains the unit 1.

The quantity or unit that is divided into equal parts, is the UNIT of the fraction.

One of the equal parts is called a FRACTIONAL UNIT.

In $\frac{5}{8}$ of a pound, 1 pound is the UNIT of the fraction, and $\frac{1}{8}$ of a pound the FRACTIONAL UNIT.

A Fractional unit or a collection of fractional units is a FRACTION. (Or it may be considered one or more of the equal parts of a unit, these parts correponding to fractional units.)

Two integers are required to express a fraction; one above a short horizontal line to denote the number of fractional units, called the NUMERATOR; it numbers, or expresses, how many are taken. The other, below the line, expresses how many fractional units it is divided into, and is called the DENOMINATOR; it denominates or names and expresses how many fractional units are equal to a unit.

The numerator and denominator taken together are called TERMS OF THE FRACTION.

Fractions are of three kinds, COMMON, DECIMAL, and DUODECIMAL. One or more of the equal parts

of a quantity, expressed by two numbers, one written above the other with a line between them, is a COMMON FRACTION—$\frac{3}{4}$, $\frac{5}{12}$ and $\frac{4}{5}$.

Its denominator is other than ten, or some power of ten.

A fractional number, whose value is less than a unit, is a PROPER FRACTION, as $\frac{2}{3}$, $\frac{6}{9}$.

REMARKS.—A proper fraction is so termed because it expresses a value less than 1. An improper fraction is not properly a fraction of a unit, the value expressed being equal to or grater than 1.

A single fraction, either proper or improper, is a SIMPLE FRACTION, $\frac{4}{5}$, $\frac{6}{5}$.

A fraction of a fraction, or several fractions joined by of, is termed a COMPOUND FRACTION, as 2-3 of 6-8 of 3-12.

A fraction in the numerator, or denominator, or both, is termed a COMPLEX FRACTION, as $\frac{\frac{2}{3}}{\frac{4}{5}}$ $\frac{3}{\frac{4}{9}}$

Dividing unity by any number is termed a RECIPROCAL; thus the reciprocal of 4 is $\frac{1}{4}$.

An integral number added to a fractional number is termed a MIXED NUMBER, as $3+\frac{4}{7}$, $7+\frac{2}{9}$.

REMARK.—The sign of addition is usually omitted.

### General Principles.

1. Multiplying the numerator increases the value of the fraction.

2. Multiplying the denominator decreases the value of the fraction.

3. Multiplying both numerator and denominator

by the same number does not alter the value of the fraction.

4. Dividing the numerator decreases the value of the fraction.

5. Dividing the denominator increases the value of the fraction.

6. Dividing both numerator and denominator by the same number does not alter the value of the fraction.

**Demonstratlons of the Principles.**

1. Because it increases the *number* of fractional units while the *value* of the fractional unit remains the same.

2. Because it diminishes the *value* of the fractional unit, while the *number* remains the same; it diminishes the *value* of the fractional unit because the unit of the fraction is divided into a greater *number* of fractional units, and each fractional unit is as many times less in *value* as there are units in the multiplier.

3. Because it increases the *number* of fractional units as many times as it decreases the *value* of the fractional unit; that is in the same ratio.

4. Because it diminishes the *number* of fractional units, while the *value* of the fractional unit remains the same.

5. Because it increases the *value* of the fractional unit, while the *number* remains the same; it increases the *value* of the fractional unit because the unit of the fraction is divided into a less number of fractional units, each fractional unit being as many times greater in *value* as there are units in the divisor.

6. Because it diminishes the number of fractional units as many times as it increases the value of the fractional unit.

**Principles.**

1. If the numerator be multiplied by any number, the number of fractional units will be *increased* as many times as there are units in the multiplier.

2. If the numerator be divided by any number, the number of fractional units will be *diminished* as many times as there are units in the divisor.

3. If the denominator be multiplied by any number, the fractional units will be *diminished* as many times as there are units in the multiplier.

4 If the denominator be divided by any number, the *value* of the fractional units will be increased as many times as there are units in the divisor.

### Analysis of a Fraction.

Naming the quantity or unit divided, the value of one of its fractional units, the number of fractional units, the denominator, numerator and the terms of the fraction, is to analyze a fraction.

Thus: Analyze the fraction $\frac{4}{5}$.

*Analysis.*

$\frac{4}{5}$ is a fraction because it expresses 4 of the equal parts of a unit. 1 is the unit of the fraction, or the unit that is divided to form the fraction. $\frac{1}{5}$ is the fractional unit, or one of the equal parts of the unit divided. 5 is the denominator, it names the parts; it shows that the unit is divided into 5 equal parts; it tells the size or value of each part. 4 is the numerator; it numbers the parts taken to form the fraction; it is written above the line. 4 and 5 are the terms of the fraction, and its value is $4 \div 5$.

### To Reduce Fractions to their Lowest Terms.

*Problem and Operation.*

Reduce $\frac{16}{20}$ to its lowest terms.

*Operation.*

$$\frac{16 \div 4}{20 \div 4} = \frac{4}{5}.$$

*Analysis*

Dividing $\frac{16}{26}$ by $\frac{4}{4} = \frac{4}{5}$; as the numerator and denominator are prime to each other, the fraction is reduced to its lowest terms. This depends upon the following principle: Dividing both terms of the fraction by the same number does not alter the value of the fraction, because the number of fractional units

is *decreased* as many times as the *value* of the fractional unit is increased. (Deduce the rule.)

**To Reduce an Improper Fraction to an Integer or a Mixed Number.**

*Problem and Operation.*

Reduce $\frac{125}{5}$ to an integral number.

Operation: $\frac{125 \div 5}{5 \div 5} = 25$, or $5)\frac{125}{5} = \frac{25}{1} = 25$.

*Analysis.*

In 1 there are 5 fifths; in 125 fifths, as many ones as 5 is contained in 125, or 25. This depends upon the following principle: Dividing both terms of the fraction by the same number does not alter the value of the fraction; the same reason as when we reduce fractions to their lowest terms. (Deduce the rule.)

**To Reduce an Integer or Mixed Number to an Improper Fraction.**

*Problem and Operation.*

Reduce $49\frac{2}{5}$ to fifths.

Operation: $\frac{5}{5} \times 49 = \frac{245}{5}$.

$$\frac{245}{5} + \frac{2}{5} = \frac{247}{5}.$$

*Analysis.*

In 1 there are 5 fifths; in 49 ones, 49 times 5 fifths, or 245 fifths: plus 2 fifths equals 247 fifths. This depends upon the following principle: Multiplying both terms of the fraction by the same number does not alter the value of the fraction, because the number of fractional units is increased as many times as the value of the fractional unit is decreased. (Deduce the rule.)

### To Reduce Fractions to a Common Denominator.

*Problem and Operation.*

Reduce $\frac{3}{5}$ $\frac{3}{6}$ $\frac{4}{8}$ $\frac{15}{4}$

$$\frac{3\times24}{5\times24}=\frac{72}{120}$$

$$\frac{3\times20}{6\times20}=\frac{60}{120}$$

$$\frac{4\times15}{8\times15}=\frac{60}{120}$$

$$\frac{15\times25}{4\times25}=\frac{375}{120}$$

*Analysis.*

The least common multiple of the denominators is 120; dividing the least common multiple by the denominator of the first fraction, we have the quotient 24; multiplying both terms of the fraction by 24, we have 72 120ths. This depends upon the following ing principle: multiplying both terms of the fraction by the same number, does not alter the value of the fraction, because it increases the number of fractional units as many times as it decreases the value of the fractional unit. (The same analysis for the remaining fractions.)

### Addition of Fractions.

*Problem and Operation.*

Add $\frac{3}{4}$ and $\frac{2}{4}$.

Operation: $\frac{3}{4}+\frac{2}{4}=\frac{5}{4}=1\frac{1}{4}$.

*Analysis.*

As the fractions have the same *fractional unit*, we may add the numerators; $\frac{3}{4}$ plus $\frac{2}{4}=\frac{5}{4}=1\frac{1}{4}$.

Add $\frac{5}{8}$ and $\frac{6}{7}$.

*Analysis.*

As the fractions $\frac{5}{8}$ and $\frac{6}{7}$ have different *fractional units*, first reduce them to fractions having the same fractional unit. $\frac{5}{8}$ is equal to $\frac{35}{56}$; $\frac{6}{7}$ is equal to $\frac{48}{56}$, now as the fractions are of the same *fractional unit* value, we may add the numerators; $\frac{35}{56}+\frac{48}{56}=\frac{83}{56}=1\frac{27}{56}$. (Deduce the rule.)

**Subtraction of Fractions.**

*Problem and Operations.*

Subtract $\frac{2}{5}$ from $\frac{3}{4}$.

Operation: $\frac{2}{5}=\frac{8}{20}$

$\frac{3}{4}=\frac{15}{20}$

$\frac{15}{20}-\frac{8}{20}=\frac{7}{20}$ Ans.

*Analysis.*

The fractions $\frac{2}{5}$ and $\frac{3}{4}$ have different fractional units. First reduce the fraction to the same fractional unit value. $\frac{3}{4}$ equal $\frac{15}{20}$; $\frac{2}{5}$ is equal to $\frac{8}{20}$; as the fractions are of the same *fractional unit* value, we may subtract one numerator from the other giving us $\frac{7}{20}$. (Deduce the rule.)

**Multiplication of Fractions—To Multiply a Fraction by an Integer.**

*Problem and Operation.*

Multiply $\frac{2}{16}$ by 4.

Operation : $\frac{2}{16} \times 4 = \frac{8}{16} = \frac{1}{2}$

$$\frac{2}{16} \div 4 = \frac{2}{4} = \frac{1}{2}$$

*Analysis.*

Multiplying $\frac{2}{16}$ by 4, by multiplying the numerator is equal to $\frac{8}{16}$ or $\frac{1}{2}$. This depends upon the following principle : Multiplying the numerator increases the value of the fraction, because it increases the number of fractional units, while the value of the fractional unit remains the same.

Again, multiplying $\frac{2}{16}$ by 4, by dividing the denominator, is equal to $\frac{2}{4}$ or $\frac{1}{2}$. This depends upon the following principle: Dividing the denominator increases the value of the fraction, because it increases the value of the fractional unit, while the number remains the same; it increases the value of the fractional unit, because the unit of the fraction is divided into a less number of fractional units, and each fractional unit is as many times greater in value as there are units in the divisor. (Deduce the rule.)

**To Multiply an Integer by a Fraction.**

*Problem and Operation.*

Multiply 24 by $\frac{2}{3}$.

Operation (a): $\frac{1}{3} \times 24 = \frac{24}{3}$

$\frac{24}{3} \times 2 = \frac{48}{3} = 16$, Ans.

Operation (b): $\frac{1}{3}$ of $24 = 8$.

$8 \times 2 = 16$, Ans.

Operation (c): $24 \times 2 = 48$

$48 \div 3 = 16$, Ans.

*Analysis of Operation.*

(a) Once 24 is 24; $\frac{1}{3}$ times 24 is $\frac{24}{3}$; $\frac{2}{3}$ times 24 is 2 times $\frac{24}{3}$ or $\frac{48}{3} = 16$, Ans.

(b) $\frac{1}{3}$ of 24 is 8; $\frac{2}{3}$, 2 times 8 or 16, Ans.

(c) Multiplying 24 by 2 = 48; as the multiplier is three times too great in value, the product is three times too great in value. To give its required value divide by 3, which gives us 16, Ans. (Deduce a rule.)

NOTE.—See that the pupil understands that $\frac{2}{3}$ of 1 is the same as $\frac{1}{3}$ of 2.

**To Multiply a Fraction by a Fraction.**

*Problem and Operation.*

Multiply $\frac{3}{7}$ by $\frac{5}{8}$.

Operation (a): $\frac{3}{7} \times \frac{8}{8}$ or $= \frac{3}{7}$

$\frac{3}{7} \times \frac{1}{8} = \frac{3}{56}$

$\frac{3}{56} \times 5 = \frac{15}{56}$ Ans.

Operation (b): $\frac{3}{7} \times 5 = \frac{15}{7}$

$\frac{15}{7} \times 8 = \frac{15}{56}$ Ans.

*Analysis of Operation.*

(a) $\frac{3}{7}$ multiplied by $\frac{8}{8}$ or $1=\frac{3}{7}$; $\frac{3}{7}$ multiplied by $\frac{1}{8}$ is equal to $\frac{3}{56}$. Since $\frac{3}{7}$ multiplied by $\frac{1}{8}$ is equal to $\frac{3}{56}$, $\frac{3}{7}$ multiplied by $\frac{5}{8}$ will be equal to 5 times $\frac{3}{56}$ or $\frac{15}{56}$

(b) Multiplying $\frac{3}{7}$ by $\frac{5}{8}$ is the same as multiplying by the eighth part of 5. First multiply $\frac{3}{7}$ by $5=\frac{15}{7}$; as the multiplier is eight times too great in value the product will be eight times too great in value; hence to get its required value divide $\frac{15}{7}$ by 8, by multiplying the denominator, which gives $\frac{15}{56}$.

**Division of Fractions—To Divide a Fraction by an Integer.**

*Problem and Operation.*

Divide 8 by $\frac{3}{5}$.

Operation (a): $\frac{6}{7} \div 3 = \frac{2}{7}$.

Operation (b): $\frac{6}{7} \times 3 = \frac{6}{21} = \frac{2}{7}$.

*Analysis.*

Dividing $\frac{6}{7}$ by $3=\frac{2}{7}$; according to the principle which says: Dividing the numerator decreases the value of the fraction, because it diminishes the number of fractional units, while the value of the fractional unit remains the same.

Again, dividing $\frac{6}{7}$ by 3, by multiplying the denominator is equal to $\frac{6}{21}$; multiplying the denominator

decreases the value of the fraction, because it diminishes the value of the fractional unit, while the number of fractional units remains the same; it diminishes the value of the fractional unit, because the unit of the fraction is divided into a greater number of fractional units, and each fractional unit is as many times less in value as there are units in the multiplier. (Deduce the rule.)

**To Divide an Integer by a Fraction.**

*Problem of Operation.*

Divide 8 by $\frac{3}{5}$.

Operation (a): $\frac{5}{5} \times 8 = \frac{40}{5}$.

$\frac{40}{5} \div \frac{3}{5} = 13\frac{1}{3}$.

Operation (b): $8 \div 3 = 2\frac{2}{3}$.

$2\frac{2}{3} \times 5 = 13\frac{1}{3}$.

In 1 there are $\frac{5}{5}$; in 8, 8 times $\frac{5}{5} = \frac{40}{5}$; $\frac{40}{5}$ divided by $\frac{3}{5} = 13\frac{1}{3}$.

(*b*) Divide 8 by $\frac{3}{5}$, or the fifth part of three; divide 8 by 3 gives us $2\frac{2}{3}$, now as the divisor is five times too great in value, the quotient is only one-fifth of its required value; to get its required value multiply the quotient by five, which gives us $13\frac{1}{3}$. (Deduce the rule.)

**To Divide a Fraction by a Fraction.**

*Problem and Operation.*

Divide $\frac{2}{4}$ by $\frac{3}{5}$.

Operation (a): $\frac{3}{4} \times 3 = \frac{9}{4}$

$$\frac{9}{4} \times 2 = \frac{9}{8} = 1\frac{1}{8}$$

Operation (b): $\frac{3}{4 \times 2} = \frac{3}{8}$

$$\frac{3}{8} \times 3 = \frac{9}{8} = 1\frac{1}{8}$$

Operation (c): $\frac{3}{4} = \frac{9}{12}$

$$\frac{2}{3} = \frac{8}{12}$$

$$\frac{9}{12} \div \frac{8}{12} = \frac{9}{8} = 1\frac{1}{8}$$

*Analysis of Operation.*

(a) 1 is contained in $\frac{3}{4}$, three-fourth times; $\frac{1}{3}$ is contained in $\frac{3}{4}$, three times $\frac{3}{4}$, or $\frac{9}{4}$ times; $\frac{2}{3}$ will be contained in $\frac{9}{4}$, $\frac{1}{2}$ of $\frac{9}{4}$, or $\frac{9}{8}$ times.

(b) Dividing $\frac{3}{4}$ by 2 gives us $\frac{3}{8}$; as the divisor is three times too great in value, the quotient is only $\frac{1}{3}$ of its required value; multiplying the quotient $\frac{3}{8}$ by 3 gives us $\frac{9}{8} = 1\frac{1}{8}$ Ans.

(c) Reduce $\frac{3}{4}$ and $\frac{2}{3}$ to a common denominator. $\frac{3}{4}$ is equal to $\frac{9}{12}$; $\frac{2}{3}$ is equal to $\frac{8}{12}$; $\frac{9}{12}$ divided by $\frac{8}{12}$ is equal to $\frac{9}{8}$ or $1\frac{1}{8}$.

### General Remarks.

It is not expected in a manual for teachers to explain every rule in arithmetic. A few rules have been carefully explained and illustrated in detail; and these are suggestive only. The plan of this work has been to give a course of reasoning leading to those conclusions from which rules are drawn,—and this is given in language free from technicalities, and easy to be understood.

The explanations for Written Arithmetic are so given as to put the pupil into the place of the *original reasoner*, until he arrives at a conclusion from which he can deduce the rule for himself.

After the pupils are familiar with the process and have received sufficient drill, they should be taught to analyze problems. The teacher should see that the analysis is *thoroughly understood* and *accurately recited.* They should be required to write out an analysis, and the pupil that presents the most *simple* and *concise* analysis should write it on the board, subject to the criticism of the class. See that the language is used correctly; that it tells "*the truth, the whole truth, and nothing but the truth.*" Now, require every member of the class to commit the analysis verbatim, as he would a demonstration in Euclid—for experience teaches that those pupils who are *critically close* in committing verbatim the demonstrations in Geometry make by far more *accurate* reasoners and ready mathematicians.

There are teachers who allow a wide range in the forms of analysis as long as the language is good and

the reasoning logical. While we would insist upon the development of *individuality* and *originality* on the part of the pupils, yet, as mathematics is an exact science, the *language used in the analysis should be exact.*

I cannot see how language may be cultivated if the teachers allow a wide range in the use of words; I call that the *best analysis* which is the most simple and concise.

### Retracing the Steps in the Solution of a Problem.

It is very common for the pupil to suppose that to explain an example simply means to state what operations—what processes were performed in reaching the results. Hence, he will consider it an unreasonable question if asked why he added or subtracted, multiplied or divided.

Such an explanation should never be accepted. To explain a problem, means to assign a reason for each of the several steps. I have heard the following given as an analysis to a problem in division of fractions. Divide $\frac{4}{5}$ by $\frac{2}{3}$.

"Invert the terms of the divisor and proceed as in multiplication." The rule tells *how* to solve the problem; the analysis gives the *reason* for each step.

### Practical Problems.

A large number of pupils who pass through the entire arithmetical course in our best schools fail to make application of their knowledge. This is owing to a lack of practical application of the rules. For

example, let them measure the school room, find out the area, measure the yard, fields, etc.; in all the tables make a practical application at the time.

Too much time is wasted in solving problems in continued addition, multiplication, division; I have known a class to linger a week upon casting out the 9's in addition. All such subjects as these and many others, like circulating decimals, true remainder, foreign exchange, alligation, algebraical and geometrical problems, should be omitted in our public schools. By those who wish to pursue advanced studies, the subjects quoted may be studied; but, as a majority of the pupils leave school at the average age of twelve years, they should be drilled upon the subjects that they will be obliged to use through life.

I would go so far that when a class had finished a portion of the arithmetic,—say to fractions,—every member should be able to solve any problem under the rules, giving a simple analysis, deducing the rule and reproducing the definitions.

**Problems.**

The pupils should bring to the class upon their slates or paper, problems already solved, with their analysis.

The teacher should be sure to hear the lesson assigned, otherwise the pupil may become careless in its preparation. After the pupils have recited what they have prepared, they should be put to the *test* in many ways; the skilful teacher will not only examine the pupils, but will cross-examine them. The teacher should call upon pupils for an original problem;

should give them practical problems and not leave a subject until they are able to make application of it, under each subject discussed. These should be examined by the teacher, carefully corrected and returned to the pupil. These exercises should be continued until good examples, illustrating any point that may be presented, can be given in the class without previous preparation.

They should be made familiar with the simplest forms of commercial paper; able to write a negotiable note; cast interest upon notes where partial payments have been made; find the profit and loss upon articles bought and sold. No subject is fully mastered by the pupil until he is able to illustrate in this manner.

Whatever text-books are used, many outside problems should be given. Among the books of problems published are the following: 1. The Regents' Questions; 1866–1878; in book form, 25 cts.; key 25 cts. Boxes of these problems, each on a card-board slip, with Key, $1.00. Davis, Bardeen & Co., Syracuse, N. Y. 2. Wentworth's Arithmetical Problems, 75 cts. Harper & Bros., New York. 3. Robinson's Arithmetical Problems, $1.00. Key, $1.00. Ivison Blakeman, Taylor & Co., New York. 4. Ray's Test Examples, 45 cts. Van Antwerp, Bragg & Co., Cincinnati.

# GRAMMAR.

## INTRODUCTORY.

Oral lessons should precede the study of the text-book, as a preparation for it. The ideas involved in the definttions should be developed, before the pupils are required to commit these definitions to memory. The contrary practice, once so common, is very discouraging and injurious to the pupil, since it compels him to learn by rote a mass of verbiage which is perfectly unintelligible to him.

Our text-books appeal chiefly to the memory and the ordinary grammar should be presented to a class as the *study of language.* Another reason why pupils so often dislike grammar is that they are hurried over the subject so rapidly that they become bewildered and utterly discouraged.

Grammar deals largely with abstract subjects, and for this reason alone, time is an important element in the attainment of proficiency. A great deal of time is wasted upon this subject; if wisely presented, as it should be, it will prove one of the most delightful and interesting studies.

One of the most common faults in teaching grammar is that of requiring pupils to commit to memory too many definitions, rules and observations.

It is an abstract subject and at first it should be taught orally, ; all the terms should be *carefully developed, explained,* and *fully illustrated* by copious examples. When these terms are fully understood, *then,* and not until *then,* should the pupils be required to commit them to memory. As fast as the terms are learned, the pupils should be required, in all cases, to embody them in sentences of their own construction.

**Grammar.**

*The Sentence.*

I. *Develop the Sentence.*

II. *Develop the parts of a Sentence.*
- 1. *Subject.*
- 2. *Predicate.*

III. *Develop the kinds of Sentences (as to use)*
- 1. *Declarative.*
- 2. *Interrogative.*
- 3. *Imperative.*
- 4. *Exclamatory.*

IV. *Develop the forms of Sentences (as to propositions.)*
- 1. *Simple.*
- 2. *Complex.*
- 3. *Compound.*

V. *Teach the correct use of Capital Letters.*

VI. *Teach the correct use of Punctuation Marks.*

**Manner of Teaching the First Lessons in Grammar.**

*The Sentence.—Lesson No.* 1.

Ask the pupils to think of some object Ask them how you may know the name of the object. They perceive that before their thoughts can be known to others they must express them. In order to communicate your thoughts, what must you use? They will discover that to express a thought, they must use words. Now ask each pupil to express the thought, as "the bird sings;" "the tree grows;" "the boy laughs;" "the clock ticks," etc. They are now told that a thought expressed in words is called a sentence.

Require the pupils to form several sentences orally, using the following analysis:

*I first think about something; I use words to express my thought. The words used are: "The bird sings." These words express a thought, and it is called a sentence. A thought expressed in words is called a sentence.*

*The Subject.*

The pupils have already discovered that there must be an object or subject of thought in the mind. And when they tell their thoughts they speak of some object or subject and tell something about it. They are led to see this in every sentence. By repeated trials they soon find that they can form no sentence without speaking of something and telling something about it.

From this explanation they will see that that of which something is said or which is spoken of, is called the subject; and that which tells what is said of the subject is called the predicate.

Ask the pupils to express a sentence and analyze it. "The clock ticks."

*"The clock ticks," is a thought expressed in words; it is a sentence; the word "clock" represents the object spoken of; it is the subject. The word "ticks" represents what is said of the clock; it is the predicate.*

That of which something is said, is called the subject.

That which is said of the subject, is called the predicate.

*The Object.*

By a similar process of development the pupils are led to observe the object of a sentence.

The teacher should write at the board all the sentences given.

*Kinds of Sentences.*

It would be well for the teacher to ask questions of the pupils and endeavor to get in reply the different kinds of sentences, as asking, telling, etc. The teacher should write these sentences as given by the pupils on the board, and let the pupils discover the differences. Let them see that every telling or declative sentence, ends with a *period.* Every asking or interrogative sentence ends with the mark of interrogation, every exclaiming sentence with an *exclamation point*, and every commanding or imperative sentence with a period.

**Review.**

NOTE.—To be committed to memory.

*1. A thought expressed in words is a sentence.*

*2. That of which something is said, is called the subject.*

*3. That which tells what is said of the subject, is called the predicate.*

*4. That which receives the act, expressed by the predicate, is called the object.*

*5. Every sentence should begin with a capital letter.*

*6. Every sentence should end with a punctuation mark.*

### The Telling, or Declarative Sentence.

*Lesson No. 2.*

*Q.* Make a sentence about this cap.

*A.* The cap is red.

NOTE.—The teacher writes it on the board, while the pupils spell the words.

*Q.* What did you do when you made this sentence?

*A.* We told you something said about the cap.

*Q.* Because this sentence tells or says something, what kind of a sentence may we call it?

*A.* We may call it a telling sentence.

*Q.* What then is a telling sentence?

*A.* A sentence that tells or declares something.

*Q.* What mark must be placed after the last word of every telling sentence?

*A.* A period.

*Q.* What have we learned in our lesson of to-day?

*A. A sentence that tells something, is called a telling, or declarative sentence. We must place a period after the last word of every telling, or declarative sentence.*

NOTE.—Require the pupils to write on their slates the definition of a sentence, subject, predicate, ob-

ject, a telling sentence and the rule for punctuation. Let the pupils spell the words, and examine the slates carefully.

**The Asking, or Interrogative Sentence.**

*T.* I will ask you a question, and will write it on the board. "Do you love study?" What did I do?

*Pu.* You asked a question.

*T.* Because it asks a question, what kind of a sentence is it?

*Pu.* An asking sentence.

*T.* What is an asking sentence?

*Pu.* A sentence that asks a question, is an asking sentence.

NOTE.—Let the pupils repeat, spell words and write the definition on their slates; ask them to examine the reading books, and bring in asking sentences.

Drill upon the above until every member knows how to use the period and interrogation mark.

**The Commanding, or Imperative Sentence.**

*T.* Tell me to do something. Can I use another word instead of tell?

*Pu.* You can use command.

*T.* Give me a command.

*Pu.* Hand me a cup.

*T.* What does this sentence do?

*Pu.* It makes a command.

*T.* What kind of a sentence may we call it?

*Pu.* A commanding sentence.

*T.* What is a commanding sentence?

*Pu.* A sentence that expresses a command is a commanding sentence.

*T.* What mark have I placed after the last word of the commanding sentence?

*Pu.* A period.

*T.* How do I begin a commanding sentence?

*Pu.* With a capital letter.

*T.* How do I close it?

*Pu.* With a period.

*T.* What is a sentence?

What is a telling sentence?

What is an asking sentence?

What is a commanding sentence?

How do I close every asking sentence?

How do I close every telling sentence?

Write five telling, five asking, and five commanding sentences.

Write the definitions of the telling, asking and commanding sentence.

**The Exclaiming, or Exclamatory Sentence.**

*T.* If you should see a house on fire, what would you say?

*Pu.* O, see the fire! A house on fire!

*T.* What would you call these expressions?

*Pu.* Exclamations.

*T.* What do these sentences do?

*Pu.* They make exclamations.

*T.* What kind of sentences are they?

*Pu.* Exclaiming sentences.

*T.* What is an exclaiming sentence?

*Pu.* A sentence that makes an exclamation, is an exclaiming sentence.

*T.* What mark do you find after the last word?

*Pu.* An exclamation point.

*T.* You may all write an exclaiming sentence.

NOTE.—Require the pupils to repeat all the definitions,—see that they understand the idea before committing them to memory. Let them construct and write many sentences, and hold them rigidly to the correct use of capital letters and punctuation marks, and require neatness in every exercise. Work on each sentence until it is right. If necessary to success, be willing to work three days on one short lesson. "Not how much, but how well should be the motto."

**Review.**

NOTE.—To be committed to memory.

*1. A thought expressed in words is a Sentence.*

*2, A sentence that tells or declares something is a Telling or Declaring Sentence,*

*3. After the last word of every Telling or Declaring Sentence we must place a period.*

*4. A sentence that asks a question is an Asking or Interrogating Sentence.*

*5. After the last word of every Asking or Interrogative Sentence we must place an interrogation mark.*

*6. A sentence that expresses a command is called a Commanding or Imperative Sentence.*

*7. After the last word of every Commanding or Imperative Sentence, we must place a period.*

*8. A sentence that makes an exclamation is an Exclaiming or Exclamatory Sentence.*

*9. After the last word of every Exclaiming or Exclamatory Sentence, we must use the exclamation point.*

NOTE.—Simple as this may seem, it requires on the part of the teacher a great deal of patience to teach it thoroughly. This is a very important subject, and the pupils should be able to make practical application of the above points. "Make haste slowly."

*Uses of Capital Letters.*

The attention of the pupils should be called to the

capital letters at the beginning of all these different sentences. This is very important, and one of the most practical rules in grammar. Require written exercises to be brought into the class, subject to the criticism of the class and the teacher.

*Recapitulation.*

After the pupils have been made thoroughly familiar with the sentence, subject, predicate and object, also the kinds of sentences, capital letters and punctuation marks, they should be required to form sentences and analyze them, and write the definitions of all the terms that have been taught. A perfect understanding of the thought to be expressed is essential to correct analysis; hence, the first step should be to prepare the pupils to analyze sentences they themselves have constructed. When they shall become quite expert at this, they may analyze the thoughts of others.

Let it be the aim of the teacher to present the subject so pleasantly and attractively that pupils will not say, as is often the case, "what a dry, distasteful, uninteresting subject."

**Sentences Classified According to their Propositions.**

*Lesson* 1.

*T.* Jennie, what have you in your hand?

*Pu.* "I have a book." (Teacher writes the answer on the board.)

*T.* What is the subject?

*Pu.* The subject is "I."

*T.* What is the predicate?

*Pu.* "Have a book."

*S. When the subject and predicate express a complete thought it is called a single proposition.*

*T.* You may now repeat it.

*Pu.* Suppose it does not express a complete thought? Oh, Mary, you are thinking.

*T.* It may, or it may not, express a complete thought, and still be a proposition; for a proposition is the union of a subject and a predicate. In the example. "I have a book," the thought is complete. In the example, "If I go,' it is incomplete; both are propositions.

Fred, do you like all the boys in school?

*Pu.* I like the boys who study.

*T.* Read the first proposition.

*Pu.* "I like the boys."

*T.* That is right: why is that a proposition?

*Pu.* Because it is the union of a subject and a predicate.

*T.* What kind of a proposition is it?

*Pu.* A single proposition, because it expresses complete sense.

*T.* Do the words "who study," make sense?

*Pu.* They do not, if used alone, but with the other proposition, they assist to complete the sense.

*T.* That is right. Are the words "who study," a proposition?

*Pu.* They are; because it is the union of a subject

and predicate. A proposition by itself may or may not form a sentence.

*T.* What is such a proposition as "who study," called? Do you know?

*Pu.* It is called the second proposition.

*T.* You might call it that, but it would not be definite: we will call it a clause, as it performs different offices.

*T.* In the sentence "I like the boys who study," which do you think is the principal proposition?

*Pu.* "I like the boys."

*T.* Why do you think that is the principal?

*Pu.* Because it is that which expresses the leading thought.

*T.* That is right. Let all repeat that. That which expresses the leading thought is the leading proposition.

*Pu.* But what of the words "who study?"

*T.* Do they make complete sense?

*Pu.* They do not; they seem to have something to do with the principal proposition.

*T.* That is right, John. They tell the kind of boys. We may call them the "study boys." It is not the principal proposition. What shall we call it? In a regiment we have principal officers and ——— (Fred answers) "subordinate." That is right, Fred. As the words "who study" modify the principal proposition we will call it a subordinate clause. Now, my brave fellows, what is a subordinate clause?

*Pu.* The clause that modifies the principal proposition, is a subordinate clause.

*T.* You may all repeat it slowly; so you see that subordinate parts or elements are those that belong to other elements. They are called subordinate because they are under in order, or in importance.

*T.* Now, let us find another kind of proposition. I see two boys in the park. Tell their names.

*Pu.* Charles and Frank.

*T.* What are they doing?

*Pu.* Charles runs and Frank walks.

(Teacher writes answer at the board.)

*T.* Read the first proposition?

*Pu.* "Charles runs."

*T.* Read the second proposition?

*Pu.* "Frank walks."

*T.* Does the last proposition belong to any word in the first?

*Pu.* It does not.

*T.* Does the first proposition belong to any word in the second?

*Pu.* It does not.

*T.* Does the first proposition express a complete thought in itself?

*Pu.* It does.

*T.* Does the second proposition express a complete thought in itself?

*Pu.* It does.

*T.* Since each proposition expresses a thought by itself, meaning that it is not dependent, what shall we call it? I will tell you. We call the propositions co-ordinate. It means that the propositions are of equal rank. We will now repeat. Propositions of equal rank or order are called co-ordinate.

*I. A sentence composed of one proposition is called a simple sentence; a sentence composed of a principal and subordinate propositions, is called a complex sentence; a sentence composed of two or more co-ordinate propositions is called a compound sentence.*

NOTE.—The teacher should not leave this division until the pupils can bring into the recitation written examples of all the different sentences. Also, require the pupils to analyze the sentences.

**Review.**

*1. A proposition is the union of a subject and a predicate.*

*2. A proposition by itself may or may not form a sentence.*

*3. A single proposition is a sentence when it expresses a complete thought.*

*4. A proposition may form an element of a sentence; it is then called a clause.*

*5. The principal proposition of a sentence is that which expresses the leading thought.*

*6. A subordinate proposition is one that modifies the principal.*

*7. Co-ordinate propositions are those of equal rank in the same sentence.*

*8. A simple sentence is one composed of but one proposition.*

*9. A complex sentence is one composed of a principal and one or more subordinate propositions.*

*10. A compound sentence is one composed of two or more co-ordinate propositions.*

**Classification of Sentences and their Elements.**

Sentences, Clauses, Phrases, Subjects, Predicates, Objects, Attributes, Modifiers, are classified in respect to form and use, as: Simple, Compound, Complex.

Sentences are classified in respect to kind or proposition, as: Declarative, Interrogative, Imperative, Exclamative; affirmative or negative.

Clauses are classified in respect to kind and proposition, as: Principal, Subordinate, Co-ordinate.

- Phrases, are classified in respect to kind: Prepositional, Infinitive, Participial.
- Sentences, Clauses, Phrases, are classified in respect to office and use: Substantive, Adjective, Adverbial, Independent.
- Elements of Sentences: Principal: Subject, Predicate: Verb, Copula and attribute. Subordinate: Object, Modifiers.
- Elements of Phrases are classified into: Principal: Connective, Subsequent Words, Modifiers. Adjunct.
- Connecting Elements are classified into: Conjunctions: Coördinate, Subordinate; Conjunctive Adverbs; Copulas; Phrases; Relative Pronouns; Prepositions.
- Independent Elements are classed into: Interjections, Substantives, Words of Euphony.

# GEOGRAPHY.

## INTRODUCTION.

That we begin to teach where the philosopher ends, is singularly applicable to the three extra subjects of elementary schools—geography, grammar and reading.

Few among teachers have seen that the scientific study of a subject implies that the mind has been first furnished with the ideas and facts which form the subject-matter of it, and which it is the province of science to explain and classify.

As a branch of school instruction, Geography has two stages, — a preparatory, and a systematic or scientific one.

### Primary Geography.

In the primary or preparatory, the object should be to furnish the mind with so much of the material as is necessary to make the systematic study interesting and profitable; in the advanced or scientific study, the aim should be careful teaching to make it an instrument of intellectual discipline.

Geography acquires its full value as a branch of education only when it loses the character of an accumulation of facts, undigested by the child's mind,

and becomes real in his memory, linked by association with the world of thought and action which immediately surrounds it or that which is within it.

Tell the child to observe the lines of the map which hangs perpetually before his eyes, and talk to him only of the names upon it, and you will soon weary his attention; but speak to him of the living men who inhabit that country,—tell him of their stature and aspect and dress, and ways of life, and of their forms of worship; speak of its climate—of the forms of vegetable and animal life with which his eye would be conversant if he dwelt there—of trees and flowers, and you excite him to a new life.

**First Step.**

*I. Talk about the earth as a whole—of what it is composed and what may be found upon it.*

The heavens catch the child's attention early, and he wishes to know about the sun, moon and stars. He has a general knowledge of the earth; he has learned something about land and water, varieties of surface, the location of places, vegetable products, natural and cultivated, and the animal and mineral kingdoms.

These things may be said to comprise the elements of geographical study; and they may be made the subjects of direct study by the children.

With these, the study of geography may begin; *not by learning words from a book*, but by *actual* observation, guided by the oral instruction of the teacher.

In teaching the first step in geography, explain to the children that the sun, moon and stars are large balls, and that they resemble the ball we live upon. Tell them that we call this ball the earth, and that "the earth hangeth upon nothing," floating free in space like a bird in the air, To excite the pupils' curiosity, and give them a correct idea of the form of the earth, blow a few soap bubbles before them, and let them float in the air, Tell them that a body of the shape of a ball is called a globe or a sphere. Talk about the outside of different objects and tell them that the outside of an object is called the surface. The outside of the earth is called the surface of the earth.

The immense magnitude of the great globe he cannot as yet imagine; at first be content to see that he understands its form and motion.

Let the children see that if they should walk on the earth a certain number of hours or days in any direction, they would come to the water.

They will now see that the surface of the earth is composed of land and water.

Tell them the fact that one-fourth of the earth's surface is land and that three-fourths is water.

Now explain to the child the figures on the globe; which is meant for land, which for water, and show him his own country.

Draw an oblong figure upon the board and divide it into four parts, let three parts represent the water and one part the land. Draw a circle upon the board and let three parts represent the water and one part

the land. Use colored chalk. The illustrations will tend to impress the correct ideas on the mind. "Happy illustrations excite curiosity."

Now, on looking at the globe, the first thing that must strike every one is, *how much more water there is on it than dry land.* Tell the children that we may ride for days and weeks on the water and not see any land.

Let them see how very unequally the land is arranged, instead of being spread evenly all over the surface; it is collected together, some portions very large and some very small. Let them see the roughness of the fields and roads and hills, not to speak of the high mountains or depths of the sea.

In the foregoing account we have spoken of the earth as a sphere, or a globe, or an exactly round ball. But this though practically true for our purpose, is not strictly correct, for the earth *is not exactly round.* You can see it is not. On so big a ball as the earth however, these things do not count for much. The earth, although so large, so many miles around it, may be traveled over—we can go around it. A train of cars at the rate of 40 miles per hour, would pass around the earth in about 26 days.

Now, ask the children what may be found upon the surface of the earth? They will give names to the different kinds of matter, such as trees, shrubs, plants, rocks, and, horses, cows, etc.

Let them see that the different things named may be classified. Tell them to name the different things found within the earth that do not grow: as iron,

lead, gold, silver, rocks, pebbles, sand, etc. Tell them that these objects belong to the *Mineral Class.*

Tell them to name the things only that grow out of the earth : as trees, plants, shrubs ; the different kinds of trees, plants and shrubs. Tell them that these objects belong to the *Vegetable Class.*

Tell them to name the animals that are found on the land, in the water, and in the air. Tell them that these objects belong to the *Animal Class.*

Ask the children which class they belong to, and tell them wherein they differ. That plants grow, breathe, take food and die. That brutes do the same ; but that men differ in that they also possess a mind and a soul.

**For Recitation.**

1. The earth is a large ball or shpere.
2. Its surface is composed of land and water ; one-fourth is land and three-fourths are water.
3. Minerals, vegetation and animals are found upon the earth.

**Second Step.**

*II. Give instruction upon the relative position of objects and places.*

Draw their observation to relation, position or place, beginning with the situation of the things which they see around them, and the distances of these from each other. Question the children as to the position of objects before them, and lead them to describe how they are placed with regard to each other, as above, below, on this side or that side, etc The teacher should represent the positions of these

objects on the board and request the pupils to copy the representations on their slates. These exercises will prepare them to appreciate the value of a map. Proceed with fixed divisions of space. Make clear the limits and form of its boundaries.

Study the position of objects and places in regard to absolute and relative distances. Make the school room the first division of space. Map with accuracy all the things learned, and have the pupils reproduce the representations.

### Third Step.

*III. Give the children a knowledge of the cardinal points of the compass in their use in geographical description.*

### East and West.

When children have been accustomed to determine the relative position of objects, they must be let to consider *places* in the same point of view ; and to this end they should be made acquainted with the use of the several points of the compass.

Let the class face the North. Ask them to point where the sun rises and where it sets. Tell them that the place in the heavens where it rises is called the *East*—that in which it sets, the *West*. Excite them to observe, both at home and at school, that the sun rises in the East and sets in the West.

Close the lesson by a stimultaneous repetition.

"That direction in which the sun rises is called the East ; and that in which it sets, the West."

### North and South.

Commence this with a repetition of the preceding

one. Call on the children to place themselves with their right hand to the East and their left to the West, and then tell them that the point directly before them is the North, and that directly behind them the South.

Ask them to repeat together, "If we stand with our right hand to the East and our left hand to the West, the point directly before us is the North, and that directly behind us, the South." Ask the pupils to face the East, the South, the West and the North. Let the children place a stick or draw a line with the chalk on the floor, in the direction of North, South, East and West.

In such exercises the object is to occupy only so much time upon each new idea as may suffice to *fix* it on the mind. A figure should be drawn on the board representing the compass, or better still a small compass should be exhibited. The teacher should see to it that the children are firm on one step of the ladder of knowledge, before they proceed to another, and not *weary* and *disgust* them, by keeping them too long on one subject.

*Semi-Cardinal Points.*

When we wish to represent the situation of different places on paper or on a slate, we call the top North, the bottom South, the right hand East and the left hand West. The teacher writes the four cardinal points on the board. But are things or places always *exactly* at the North, the South, the East or the West? Where may they be? They

may be between any two of these points. A point half way between North and East is Northeast. What do you think half way between North and West is called? Develop the other semi-cardinal points in the same way. Drill upon the above facts. Draw a square at the board and let the children mark and tell the cardinal and semi-cardinal points.

Draw a circle on the board and mark off the principal and intermediate points.

Let the teacher draw the outline of the room on the floor in chalk, and mark the position of objects within it, and when a map of the room is substituted, place it first in a horizontal position.

Let the pupils place the different articles in the room along the northern, the eastern, southern and western boundaries.

Require them to draw the room according to the same scale, and mark the relative positions of the objects.

Let them measure the length of the school room by a foot measure; see that it is correctly done.

Let the children see that we cannot represent the dimensions of the room on the board by using the scale of feet, but that we must use the scale of inches. Now let one foot of the room be represented by one inch on the slate or board. If the room is twelve feet long, how many inches shall we make our line on the slate? *Twelve.* Proceed in the same manner until the children obtain a correct idea of a scale. For example, the inch, the foot, the yard, the rod and the mile.

Teach the location of streets and the direction of them ; the public building, etc. Let the children see that in geography we need not say top and bottom, right and left, but we call them north, south, east and west. When you are in front of a globe or a map, the top is north, the bottom is south, the right hand is east, and the left hand is west.

**Fourth Step.**

*IV. Give instruction and drill upon geographical definitions.*

*Land Divisions.*

Draw an irregular figure on the board representing one of the divisions of the earth,—say, South America. In drawing the coast, (that is, a rib or side—the edge of the land near the sea,) make the projections and indentations *prominent*, so that we may be able to use the figure to give the children a correct idea of the shape of land and water divisions. The larger figure will represent one of the mainlands of the world, as distinguished from islands, which, though large, are still evidently surrounded by the sea ; and it is called a *Continent.*

A prominent projection of land from the coast,—not quite an island, not quite surrounded by the water,—is called a *Peninsula.* It projects from the mainland or body, and generally is quite narrow at the point of projection and gradually widens. Where there is a Peninsula there ought to be an Isthmus, which is a neck of land connecting it with the mainland.

Proceed in the same manner to develop all the land divisions. Continue the drill until all the children understand what is meant by the terms used—such as *Continent*, *Peninsula*, etc.

Let the children draw many figures until they are perfectly familiar with all the land divisions.

*Water Divisions.*

Let the children see that all the water of the earth belongs to one great ocean, sometimes called the sea. Tell them that the ocean is the largest body of water. Talk to them about the extent of the ocean, what is found within its waters, and the great thoroughfares of commerce.

*Gulf and Bay.*

Draw a figure with a prominent indentation in the coast, and let the children see that a recess in the coast is called a Gulf and Bay. The gulf is usually the narrower and deeper, and the bay broader and more open of the two. In fact, the words are used without exactness of distinction.

A narrow passage of water between two continents, not very deep, is called a Strait. A *Sound* is also a narrow passage of water between two continents or islands, but much deeper. All of the water divisions may be represented on the board in such a manner as to convey very correct impressions. Develop all the terms in the same manner.

The teacher should not be content until these terms are thoroughly understood and mastered. The object of them all is to teach the pupils about the earth, and they are of no use if they do not do that. Get the

pupils into the habit of looking at the country itself, finding out all the ideas they can and what they all mean.

### Begin at Home.

The most important spot for us all in this and many other respects is our homes. What sort of a country is it? What about its hills and mountains; its valleys and plains; its resources and thoroughfares? Can you answer all these questions? It is that sort of inquiry, begun at your own home and gradually inclining to other countries and scenes till you know all about them, which is the useful part of that great science of man and nature of which Geography is an important part. There is no subject which unites you to a higher, happier life, than Geography. Keep your eyes open, and you will see something to study every day of your life.

### How to Teach Geograpy.

Instruction in Geography embraces two departments, viz: Primary and Advanced.

Primary Geography should be strictly objective; Advanced must of necessity be subjective.

Objective instruction operates on objects present to the senses, perceiving in them certain principles and relations, and gradually realizing that the principles herein perceived are common to all objects of the same kind.

This involves conception, generalization, and finally abstraction,—this is the law of development.

I. Teach direction, and apply it to the school house and immediate surroundings.

II. Teach dimensions, especially in the smaller denominations, with frequent tests. Direction and dimensions are essential to conception of space and distances in space.

III. Proceed with fixed divisions of space. Make clear the form of its boundaries.

Study the position of things within the space in regard to distances and directions. Make the school room the first division of space. Map with accuracy all the things learned; have the pupils reproduce the maps.

IV. Take the school-house grounds as the second division of space and apply the preceding principles; thence in succession the district, the township, the county, the State, the nation, the world.

V. Study the vegetation, the animals, and the minerals of the smaller spaces. Give names and uses, distinguishing the wild animals and vegetation from those which are cultivated.

VI. Study the occupations and the trades of the people.

VII. Study the manufactures and the forces employed in driving the machinery.

VIII. Study the commerce and the transportation.

IX. Study the social, religious and political organizations.

The above may be all taught objectively; for examples of them come within the perception of every ordinary child, if he be but taught to use it.

This local geography should be exhausted before undertaking the general study of the world; it gives the basis of understanding the subjective treatment.

### Advanced Geography.

I. Study the form, size and position of the earth.

II. Study its surface in respect to land and water and their relations.

III. In studying particular divisions pursue a natural order, viz; outlines, surface, climate, vegetation, minerals, animals, nations.

### General Caution.

The geography of the common school is not true geography; it is a miserable hotch-potch of insignificant fragments, and is utterly unworthy the great name it bears and the time it occupies. Gigantic facts, magnificent generalizations, splendid speculations, involving, as they do, the mightiest problems in several of the other sciences, are certainly not fitting food for little children's minds. Their imaginations are confounded at its first propositions. The huge round world, swinging unsupported in limited space, and wheeling with an inconceivable velocity along its trackless orbit, parcelled into vast expanses of continent and still vaster oceans, and peopled with a billion of human beings, what a conception is this to offer to a little child! Picture it, explain, illustrate it as we will, it still remains a great mystery of which nothing is learned but the vaguest ideas. Nor are its later problems less difficult than these first and fundamental notions. The alternations of day and night, with their varying lengths in different latitudes and different seasons; the variety and succession of the season and their relation to climate; the precession of the equinoxes; the movements of the tides

the flow of the oceanic currents; the sweep of the winds; the great laws of climate; the geographical distribution of plants and animals, and the migrations and varying civilizations of the human race;—these surely are not questions for mere tyros in learning and novices in study to solve.

### Map-Drawing.

*Suggestions.*

1. Begin with the school-room and draw a plan of it on the board.
2. Draw around it the plan of the yard.
3. Let the children measure the dimensions of the room and the yard and draw the plan to various scales.
4. Draw a map of the neighborhood, village, city, etc.
5. Let the pupils indicate the various streets, public buildings, etc.
7. GIVE THOROUGH DRILL.

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## GEOGRAPHY OF NORTH AMERICA.

*Introductory.*

Advanced Geography enables us to give some culture to the understanding. Facts have to be classified, generalizations to be made, laws to be discovered and the connection of causes and effects to be established. It is now clearly understood that the most profitable way of teaching the geography of a country is to take up its *physical features first*, and then the facts which

depend upon them. To be made acquainted with the physical features of a country is as necessary to a geographer as the knowledge of the bones and great blood vessels of the human frame is to the anatomist. One in order to understand the real geography of a country,—its organic structure, if I may so call it, the form of its skeleton—that is, of its hills; the magnitude and course of its veins and arteries,—that is, of its streams and rivers;—should conceive it as a *whole* made up of connected parts; and then the position of man's dwellings, viewed in reference to these parts, becomes at once easily remembered, lively, and intelligible besides.

The use of the blackboard in teaching geography is now general. Its relation to the use of maps is better understood than it was. It furnishes the means of exhibiting any portion of a map on a larger scale, and bringing out prominently any feature that may be required — maps often confusing because so crowded.

By means of colored chalk, the separate classes of facts may be kept distinct and their relation more clearly shown. All facts presented to the eye are impressed on the mind. "The faithful sight engraves the knowledge with a beam of light."

In the treatment of this subject, Physical and Political Geography will be associated as *inseparable*—as one subject—with this fact overlooked geography becomes a mass of meaningless details, without either cause or correlation, while its study degenerates into men rote work.

## Study of North America.

### *I. Position.*

1. North America is in the Western Hemisphere.
2. It is the Northern Grand Division.
3. It is found in the New World.

### *II. Extent.*

1. It extends from the Arctic Ocean almost to the Equator.
2. It is about 4,800 miles in length.
3. It is about 3,000 miles in width.
4. Area in square miles 8,929,660.
5. Comparative size — It is double the size of Europe, but only one-half as large as Asia.

### *III. Form.*

1. In form this Grand Division is triangular.

### *IV. Outline.*

1. Its outline is irregular.
2. The projections and indentations are prominent.
3. The Northern Coast is the most irregular.
4. The Atlantic seaboard is much more indented by bays and gulfs than the Pacific coast.
5. These inbreakings furnish good harbors, and this is a commercial advantage.

### *V. Coast.*

NORTHERN COAST.

1. The principal projections from the Northern coast are the Peninsulas of Labrador, Melville and Boothia. The principal capes are Cape Charles, Cape Chidley, Cape Bathurst, aud Cape Barrow.

2. The principal indentations are Hudson's Bay, James Bay, Ungava Bay, and Coronation Gulf.

3. The adjoining islands are Southampton, Fox Land, Prince William's Land, Prince of Wales, Prince Albert, Melville, and Grinnell's Land.

4. The commercial advantages are limited.

EASTERN COAST.

1. The principal projections from the Eastern coast are Peninsula of Nova Scotia, Cape Cod, Cape May, Cape Charles, Cape Henry, Cape Hatteras, Cape Lookout, Cape Canaveral, and Peninsula of Yucatan.

2. The principal identations are the Gulf of St. Lawrence, Bay of Funda, Massachusetts Bay, Cape Cod Bay, Long Island Sound, Narragansett Bay, and Chesapeake Bay.

3. The adjoining islands are New Foundland, Cape Breton, Martha's Vineyard, Nantucket, Long Island, Bermuda, Bahama, and the West Indies.

4. The commercial advantages are unlimited, since the Atlantic seaboard lies nearest the great markets of the Old World.

SOUTHERN AND WESTERN COAST.

1. The principal projection from the Southern coast is the Peninsula of Florida; from Western coast, Corrientes, Cape St. Lucas, Peninsula of California, Cape Mendocino, Cape Flattery, and the Peninsula of Alaska.

2. The principal indentations are the Gulf of Mexico, Bay of Campeche, Bay of Honduras, Gulf

of California, San Francisco Bay, Gulf of Georgia, Bristol's Bay, and Norton Sound.

3. The adjoining islands on the Western coast are Vancouver's, Queen Charlotte's, Sitka, Kodia and Alutian.

*VI. Straits.*

1. The straits on the Northern coast are Davies' Strait, Hudson's Strait, Frobisher's Strait and Bark's Strait; on the Eastern coast, Strait of Belleisle and Florida Strait; on the Western coast, Strait of Juan de Fuca.

2. The commercial advantages are limited; few harbors are found on the Southern and Western coast.

*VII. Relief.*

1. The vertical configuration of the continent or island—that is, its elevation as a whole—varied by plains, table lands, mountains and valley, is called its relief.

The relief may be said to consist of elevation and depressions.

The forms of relief are exceedingly varied; the elevations when they reach or exceed 1000 feet are called *plateaus* or *table lands*; when less than 1000 feet, are called *plains* or *low lands*; the term hill is applied to ridges less than 2000 feet in elevation.

A knowledge of the reliefs of continents is of the utmost importance.

A difference in altitude of no more than 330 feet, is sufficient to produce a temperature of one degree, being equivalent to a difference of seventy miles in latitude.

Again, the relief of a continent controls its drainage, shaping the river basins and directing the course of the rivers, and influences to a certain extent the direction and character of the winds and the distribution of rivers.

*VIII. Common Features of Continental Relief.*

1. Structure of Continents.—According to the theory of modern geographers there are *six* continents. There are certain grand features common to all—a peculiar combination of mountain systems, plateaus and plains. Each continent has upon one side of the centre a great mass of elevated lands, usually extending throughout its entire length, and constituting the *primary feature* of its structure. On the opposite side is found a similar, though smaller and less elevated mass extending through a part of the continent, and constituting the *secondary feature* of the continental structure. Between the *primary* and *secondary* elevations is a central depression, which forms the *third feature* common to all continents.

These elevated masses are sometimes called the *main* axis and *secondary* axis of a continent. There is a marked unity of structure—one common plan pervading all the continents. In each of the two Americas, the main axis extends through the entire length of the continent. The *main* axis lies near the Western shore ; the *secondary* axis near the Eastern. Vast low plains occupy the interior ; but the plains on the seaward slope of the axis are only of limited extent.

### *IX. Surface of North America.*

The surface of North America is naturally divided into five parts : The Western or Pacific Highland ; the Low Central Plain ; The Eastern or Atlantic Highland ; and the Pacific and Atlantic Slopes.

*a.* Western or Pacific Highland.—The Pacific Highland, or Great Plateau Belt, which forms the primary feature of North America, occupying almost all of the Western half of North America, extends from the Atlantic Ocean to the Isthmus of Panama.

This region consists of a vast plateau, surmounted by two lofty mountain systems, the Rocky Mountains on the East and the Sierra Nevada and Cascade ranges on the West, with numerous shorter paralled ranges lying between them. The breadth of the plateau between the Rocky Mountains and the Sierra Nevadas is not less than 600 miles, and the more Northern portions have a breadth of about 300 miles ; the plateau is quite low in the North, but rises gradually as it extends to the South. The elevation increases, though a succession of swells and depression, from 800 feet near the Arctic shore to 8000 feet in the table-land of Mexico, whence it decreases rapidly Southward.

The Rocky Mountains form the main watershed in the United States, and five of the largest rivers,—the Missiouri, the Rio Grande; the Colorado, the Columbia and the Yukon. It includes three basins—the basin of the Columbia and the Colorado rivers, and between them the Great Basin of Utah.

The Pacific Plateau extends from the Rocky Chain on the east to the Sierra Nevada and Cascade Mountains on the West. Their Eastern slope is short and abrupt, its base resting upon the plateau, which is from 2,000 to 4000 feet in elevation. The Western slope is long and gentle, descending into extensive valleys which are but little above the level of the sea.

Low mountains called the Coast Range lie between these border chains and the Pacific Ocean. The Coast Ranges North of Cape Flattery is broken into a series of islands.

The Rocky Mountains rise to a height of 8000 feet above the surrounding country ; they are from 12000 to 15000 feet above the sea level.

*b.* The Atlantic Highlands form the secondary feature of the continent, and they extend from the Northern coast of Labrador nearly to the Gulf of Mexico ; approaching, but not meeting the Western highlands on the South. This region consists of the plateau of Labrador, with the Laurentide Mountains on the North of the St. Lawrence, and the Appalachian System and the adjacant low plateaus on the South.

2. The Labrador Plateau is about 2,000 feet in elevation, and the Laurentide Mountains are rarely above 4,000 feet.

3. The Appalachian region is composed of a succession of low, parallel mountain ranges, separated by long, trough-like valleys ; and a plateau about 2,000 feet high, which descends gently from the crest of the westernmost range towards the interior of the continent.

The average height of the mountain chain is about 3,000 feet. The highest peaks are from 6,000 to 6,700 feet in elevation. It has very little table land.

*c.* THE LOW CENTRAL PLAIN lies between the two highlands of the continent, which, with but slight variations of level, stretch from the Arctic shores to the Gulf of Mexico. A slight swell near the centre, designated the Height of Land, separates it into two parts, one descending northward to the Arctic Ocean, the other southward to the Gulf. This swell which connects the Atlantic with the Pacific highlands, is from 1,000 to 2,000 feet above the level of the sea. The Central Plain is formed by the long, gentle slope descending eastward from the base of the Rocky Mountains.

2. On the South their intersection is marked by the position of the Mississippi River. On the North a broad low swell, approximately parallel with the Rocky Mountains, extends from Lake Superior to the Arctic Shores, separating the Northern plain into two vast basins.

3. The Western basin, which is narrow and elongated, is connected with the Eastern by a break in the dividing swell, through which the Nelson River flows to Hudson Bay. The Eastern basin, which is more expanded, is partly below the level of the sea and covered by the waters of Hudson Bay.

4. A series of remarkable depressions, occupied by the great lakes of the Mackenzie and Saskatchewan river systems.—Great Bear, Great Slave, Athabasca, and Winnepeg—marks the intersection of the northern swell with the slope from the Rocky Mountains.

5. On the Height of Land, near its junction with the northern swell, are three vast depressions, diverging from a common centre, with a depth reaching considerably below the level of the sea. These are filled by the waters of the great lakes—Superior, Michigan and Huron.

Similar, though less extensive, basins in the St. Lawrence valley are occupied by lakes Erie and Ontario.

6. The Central Plain consists of two immense slopes,—the Northern being the Arctic Plain, the Southern the Mississippi Valley.

7. The Mississippi Valley occupies one-half of the entire area of the United States. The surface is undulating; parts are hilly; on the whole, the surface is that of a plain, with slopes toward the centre from off the two highland regions and a general slope from the height of land Southward to the Gulf of Mexico.

8. The Plains.—The name of the Plains is given to a section of the country extending a considerable distance to the Eastward of the Rocky Mountains. It may be called a sloping plateau; there is no well defined limit at which the name of plateau must be exchanged for that of a plain.

*d.* The Pacific Slope extends from the crest of the Sierra Nevada and the Cascade Ranges westward to the Pacific Ocean. Its average width is about 150 miles. Between these ranges and some lower elevations along the coast is enclosed the great California Valley.

*e.* The Atlantic Plains is the slope from the Alle-

ghany Mountains to the Atlantic Ocean. It varies in width according as the mountains approach or recede from the sea coast. Upon the Northern coast of the United States it is about 50 miles in width ; at the mouth of the Hudson River, it varies to a mere strip of coast ; it broadens southward to a width of 300 miles.

The teacher should take up the rivers, lakes, climate, etc., as the next subject in order for study, based upon the following order, viz :

*X. Rivers.*

1. Classification by river-systems.
2. Description of particular rivers.
   *a.* Length and size.
   *b.* Availability for navagation.
   *c.* Availability for water-power.
3. (Rivers of the particular locality.)

*XI. Lakes.*

1. Description.
2. Uses.
   *a.* As yielding fish.
   *b.* For navigation.

*XII. Climate*

1. As determined by latitude.
2 As modified by particular causes,—altitude, proximity to the sea or the great lakes, winds, etc.
3. (At the home of the pupil,—local geography.)

*XIII. Natural Advantages.*

1. (At the home of the pupil,—local geography.)

2. On the surface of the earth.
   *a.* Nature of the soil with reference to agriculture.
   *b.* Forrests,—nature and uses of the woods.
   *c.* Facilities for transportation afforded by the sea, rivers, lakes, etc.
3. Within the earth.
   *a.* Useful minerals and metals—as coal, building material, iron, copper, lead, etc.
   *b.* Precious metals,—as gold and silver.
4. In the waters.
   *a.* Sea-fisheries.
   *b.* Lake and river fisheries.

### XIV. *Industries, or Occupations.*

1. Agriculture.
   *a.* Relative importance among the industries of the State.
   *b.* The crops raised.
   *c.* Statistics of crops.
   *d.* Cattle, sheep and hog raising.
2. Manufacturing.
   *a.* Relative importance.
   *b.* Articles produced,
   *c.* Statistics of manufactures.
4. Mining.
   *a.* Metals or minerals found.
   *b.* Mines, to what extent worked.
5. Lumbering.
   *a.* Locality of the forests.
   *b.* Description of the method.

5. The Fisheries.
   *a*, Locality of the fisheries.
   *b*. Kinds of fish taken.
6. Commerce.
   *a*. What is exported.
   *b*. What is imported.
   *c*. Means of transportation.

*XV. Internal Improvements.*

1. Railroads.
   *a*. Local railroads.
   *b*. Trunk-lines.
2. Canals.
3. Navigation on lakes and rivers.

**Blackboard Tabulation of the Relief.**

*North America.*

I. Western Highlands.
1. The Plain.
2. Rocky Mountains.
3. Pacific Plateau.
4. Cascade Range.
5. Sierra Nevada.
6. Coast Range.
7. Pacific Slope.

II. Eastern Highlands.
1. Atlantic Slope.
2. Appalachian System.
3. Western Slope.
4. Tide Region.
5. Plateau of Labrador.
6. Laurentide Mountains.

III. Central Plain.
1. Northern Slope, Arctic Plain.
2. Southern Slope, Miss. Slope.

IV. Height of Land.

After this subject has been taught objectively and fully illustrated, the above tabulation should appear on the board and the pupils be required to recite topically.

The pupils should name every important item connected with the relief, and the teacher should require the pupils to write a composition, using the tabulation as an outline.

It is expected that after the subject is taught objectively all the divisions will be tabulated in a similar manner.

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## NEW YORK STATE.

### Special Study.

*I. Position of the State.*

1. It is situated between the Atlantic Ocean and two of the Great Lakes.

Its land boundaries, separating it from Pennsylvania, New Jersey, New England and Canada are straight lines, and constitute nearly one-third of the entire boundary of the State. Their total length is 541 miles. The remaining boundaries, 879 miles in length, are all navigable waters, except 17 miles on Poultney river. They include 352 miles on Lakes Erie, Ontario and Champlain ; 281 miles on Rivers Niagara, St. Lawrence, Poultney, Hudson, Kill van Kull and Delaware, and 246 miles on Long Island Sound and the Atlantic Ocean.

Boundaries of the State :—It is bounded on the

North by the Dominion of Canada, Vermont and Connecticut; on the East by Vermont, Massachusetts, Connecticut and the Atlantic Ocean; on the South by the Atlantic Ocean, New Jersey and Pennsylvania; on the West by New Jersey, Pennsylvania and the Dominion of Canada.

*II. Outline.*

The form of the State is very irregular.

*III. Extent.*

1. Its area is 47,000 square miles.
2. Its population is 4,698,958.
3. Its extreme length is 320 miles, exclusive of Long Island, the length of which is 120 miles.

Its extreme breadth, from the Canada line to the South point of Staten Island, is 312 miles.

*IV. Coast.*

1. It has but a little sea-coast, and this is found in the South-eastern portion of the State, containing one of the best harbors in the world.
2. It has an extensive lake-coast on its Western, Northern and Eastern portions, containing many harbors.
3. There are no prominent projections of peninsulas or capes from this State, but indentations are frequent on the lake-coasts, forming excellent harbors.

**Harbors.**

New Nork Bay, lying South of Manhattan Island, between Long Island and Staten Island, affords an

excellent harbor ; on Lake Erie are two harbors at Buffalo and Dunkirk ; on Niagara River are two harbors at Tonawanda and Lewiston ; on Lake Ontario are fine harbors at Genesee, Sodus, Oswego, Sackett's Harbor and Cape Vincent ; on the St. Lawrence is one harbor at Ogdensburg ; on Lake Champlain are four harbors at Rouse's Point, Plattsburg, Port Henry and Whitehall ; Sagg Harbor is on the Eastern part of Long Island.

### Adjoining Islands.

The islands adjoining the North-eastern portion of the State are Manhattan, Staten, Long, Governor's, Bedlow's, Ellis—the three last belong to the United States. Blackwell's, Randall's, Ward's, Hart's, Fisher's, Plum, Gardner's, and Shelter Islands are found in the East River and Long Island Sound. New York city, situated on Mahattan Island, contains two United States Forts ; and Bedlow's and Ellis Islands are used for store-houses of amunition. Forts are located upon either side of New York Bay on Long Island and Staten Island.

The islands in Lake Champlain are Valcour, Crab, Schuyler, North Hero and South Hero.

The principal islands in the Northern St. Lawrence are Carlton, Grenadier, Fox, Mills and Grindstone.

The Thousand Islands are in the Southern part, near the source of the St. Lawrence.

The principal islands in the Niagara are the Grand, Squaw, Strawberry, Rattlesnake, Tonawanda, Beaver and Goat.

*V. Surface.*

The greater part of the State lies in the Eastern Highland, and has a very diversified surface.

The North-eastern and Eastern parts are mountainous; the Southern part undulating. It has a wonderfully varied surface. Its high and wooded mountain ranges, its extensive valleys and broad plateaus, its many beautiful lakes, water courses, cascades and rapids, and its vast extent of highly fertile soil, render it one of the most important portions of the American continent.

Long Island is mostly a low and level sandy plain, broken in the Northern part by low hills of sand and gravel.

**Adirondack System.**

1. The North-eastern portion is covered by the Adirondack System, which are the highest and most rugged in the State, and consist of a number of nearly parallel ranges, having many interlocking spurs. They extend from the North-east to the South-west, and are composed of the St. Lawrence, Chateaugay, Ausable and Clinton ranges. The highest peaks are found in the Ausable range; Mount Marcy 5402 feet in height; McIntyre 5201; Gothic 5000; Dix 4816; and Seward 4284 feet.

**Highlands.**

1. Lying in the same general direction as the Appalachain System, are the rugged and forest-clad Highlands, consisting of several nearly parallel mountain chains, which extend across the Hudson

into the Eastern portion of the State. The Highlands are a continuation of the Blue Ridge, which, after crossing Pennsylvania and New York, ends in the Green Mountains of Vermont and New Hampshire. The Catsbergs and Hilderbergs are continuations of the westward ranges of the Alleghanies. The highest peaks of the Highlands are Butter Hill, Crow's Nest and Bear Mountain; these are in Orange County. Bull Hill, Anthony's Nose and Breakneck are in Putnam County; and Beacon Hill in Dutchess County.

### Shawangunk Mountains.

North and West of the Highlands are the Shawangunk Mountains, a continuation of the Blue or Kittatinny. This long and broken crest, 2000 feet high, is separated from the Highlands, by a broad undulating valley, which is an extension of that known in Pennsylvania as the Cumberland Valley.

### Catskill Mountains.

North of the Shawangunk Mountains are the Catskill, the highest in this portion of the State. They are broken into many peaks, the highest having an altitude of about 2800 feet.

The mountains of this region all belong to the great Appalachain System; the chain is made up of a succession of ridges, whose prevailing course is parallel with each other and with the general coast line of the continent.

The general character of the Appalachain range in New York is a gradual change from mountains to hills, which finally sink away in the low lands of the great St. Lawrence basin.

To the West and North of the Shawangunk the Catskills are piled up, one upon another, in sublime majesty—the whole view being unsurpassed in the grandeur and sublimity of its character. From the Summit of Overlook Mountain more than 250 peaks of the Catskill range may be seen, including Round Top, Black Head, Table Mountain, Peak Amoose, or Slide Mountain, Enbaumberg, High Point and Mt. Tobias.

Three distinct ranges or collections of parallel ridges pass through New York State, from South-west to North-east.

The first or most easterly of these is the continuation of the great Blue Ridge of Virginia, Maryland, and Pennsylvania, the main portions of which, passing through the North-western corner of New Jersey, forms the Shawangunk Mountain, which, extending between Sullivan and Orange counties, strikes the Hudson in the southern part of Ulster county. South-east of this long ridge a succession of smaller ridges run parallel with it, some of which cross Orange and Rockland into Putnam and Dutchess counties, east of the river. The gap through which the Hudson flows is across these smaller ridges, whose highest summits rise to heights varying from one thousand to seventeen hundred feet above tide-water. The Taghanic and Green Mountains of Western Massachusetts and Vermont are probably prolongations of the Blue Ridge. This range culminates in the Highlands upon the Hudson. The highest peaks are 1,000 to 1,7000 feet above tide.

The mountains are rocky and precipitous, and unfit for cultivation.

The second series of these ridges enters the State from Pennsylvania, and extending through Sullivan, Ulster and Green counties, terminates in the beautiful Catskills, a short distance west of the Hudson. Its highest peaks are from 3,000 to 3,800 feet above tide. Helderbergs are spurs from this series. Their summits are generally covered with old red sandstone.

The third series passing through Broome, Delaware, Otsego, Schoharie, Montgomery, and Herkimer counties, reappears beyond the Mohawk, and there constitutes the Adirondack Mountains, among whose summits the Hudson finds its source. The culmination of the whole Adirondack System is Mt. Marcy.

### Palisades.

In the South-eastern part of the State, are found the picturesque Palisades whose left perpendicular walls of gray rock begin in New Jersey, opposite Manhattan Island, and border the Hudson for about 20 miles.

A Height of Land extends from the central part westward, bordering on Lake Ontario. It is supposed that the waters of this lake once extended to this ridge.

### Valleys.

The State abounds in beautiful and fertile valleys. The long and low valleys of the Hudson and the Mohawk meet almost at right angles near the mid-

dle of the Eastern boundary, and divide the State into three distinct sections, each having marked peculiarities.

In the Southern part of the State are found the valleys of Delaware, Susquehanna and Chemung; in the Western, the beautiful valley of Genesee. The greater part of the State West of the Catskill and Shawangunk Mountains is a broad plateau, highest in the southwest.

The southern part of the region is drained by the numerous branches of the Susquehanna, Alleghany and Delaware; the Northern portion by streams flowing into Lake Ontario. All of these have cut long and deep valleys and gorges across the plateau. South of the line of water-shed between the two sets of streams the plateau is for the most part covered with hills, the highest in Cattaraugus and Chautauqua counties, having an altitude of 2,500 feet above the sea.

North of the water-shed a beautiful rolling country descends in a series of broad terraces to a low and level belt along the shores of Lake Ontario.

The most remarkable features of the terrace region are the transverse valleys extending from South to North.

In the Northern part of the State are found the valleys of Lake Champlain and the St. Lawrence.

### Direction of Slopes.

In the Northeast the slope of the land is towards Lake Champlain. In the East towards the Hudson and the Mohawk valleys. In the South towards

Pennsylvannia. In the West towards Lake Erie and the River Niagara. In the North towards Lake Ontario and the River St. Lawrence.

*VI. Rivers.*

*I. Classification of river-systems.*

**St. Lawrence System.**

The Western slope of the Adirondacks gives rise to various small rivers called the *St. Lawrence System* The rivers constituting this system are the Oswegatchie, Grass, Racket, St Regis, Salmon and Black; the last flowing into lake Ontario, the others into the river St. Lawrence.

**Lake System.**

A secondary water-shed is formed by a Height of Land between and to the North of the head-stream of the Susquehanna, which rises in Otsego Lake, and the head-stream of the Alleghany, which turns northward into New York. This height of Land forms the "divide" between the streams flowing northward into Lake Onatrio and westward into Lake Erie, southward into Pennsylvania, and eastward into the Hudson river.

The rivers constituting the Lake System are: The Tonawanda, Buffalo and Cattaraugus, which flow into Lake Erie and Niagara River; and the Genesee and Oswego which flow into Lake Ontario. The latter is the outlet of a series of lakes in Central New York.

**Southern System.**

The rivers constituting the Southern System are

the Delaware, which receives the waters of the Popacton and the Neversink upon the East; the Susquehanna which receives the waters of the Unadilla creek and the Chenango on the North, and on the West the Chemung, which receives the waters of the Conhocton on the North and the Tioga on the South; and the Alleghany which discharges its waters into the Ohio.

### Hudson River System.

The rivers constituting this system are the Schroon, Battenkill, Hoosac and Croton, Eastern tributaries to the Hudson; and the Walkill, Rondout, Sacondaga and Mohawk, Western tributaries to the latter river; West Canada Creek is the Northern tributary of the Mohawk and Schoharie the Southern.

The Ausable and the Saranac rivers discharge their waters into Lake Champlain.

*II. Description of particular rivers.*

### The Hudson River.

The Hudson has its most remote sources among the highest peaks of the Adirondack Mountains, 4,000 feet above tide-water. Its numerous upper branches unite and thence follow a southerly course, broken by numerous falls and rapids, to Troy, where it meets tide-water. The remaining 150 miles are navigable by large steamers and coasting crafts. Ships can ascend to Hudson.

The length of the Hudson is 300 miles. Among the streams which drain the great Atlantic slope, none is more attractive than the noble river at whose

mouth stands the Empire City of the Western World.

### Susquehanna River.

Its length is 400 miles; it rises in Otsego Lake; flows in a winding course South into Chesapeake Bay. In size it is one of the principal rivers of the State, but it is too shallow and too rapid in its fall to be of much advantage for navigation.

### Genesee River.

The Genesee River is 110 miles in length ; it rises in the Northern part of Pennsylvania and flows North into Lake Ontario. It has washed out deep gorges and contains five water-falls ; on the upper Genesee are three cataracts of 60, 90, 110 feet, called Portage Falls ; on the lower two cataracts. The Genesee Falls at Rochester are 96 feet high, besides the rapids above and a broken fall of 84 feet but a few miles below.

The Genesee River is navigable for 7 miles, from its mouth to the Lower Falls. It passes through one of the most fertile valleys in Western New York.

### Niagara River.

The Niagara River forms the Western physical boundary of New York State, and is 40 miles in length. The cataract of Niagara is the grandest and most celebrated water-fall in the world. Niagara River, which receives the drainage of four of the great lakes, and is from two to three miles wide immediately below Grand Island, here becomes very much narrower.

It rushes with great rapidity over its rocky bed, falling 52 feet in about a mile, and presents a vast expanse of wildly tossing waters, its surface everywhere lashed into foam.

At the lower edge of these rapids the river is divided by Goat Island, and leaps in two broad sheets over the precipice, falling with a thundering sound into the chasm below.

The smaller, or American Fall, is 164 feet high; the Canadian or horseshoe Fall, is about 150 feet.

The Gorge, seven miles in length, is as wonderful as the cataract itself. Its width varies from 1200 to 600 feet, and its lofty vertical walls distinctly show that the falls were once at the Northern end of the chasm, and that they have in the course of ages slowly cut this deep and remarkable channel through the solid rocks.

This river is spanned by two suspension bridges; a foot bridge at the Falls and a carriage and railroad bridge two miles below. It is navigable from its mouth to Lewiston.

### Mohawk River.

The Mohawk River takes its rise on the Western slope of the Adirondack Mountains, and flows south and then eastward into the Hudson.

It has cut a deep gorge through one of the spurs of the Adirondack System of Mountains at Little Falls. At Cohoes the river flows over a rocky declivity 78 feet in height, of which 40 feet is a perpendicular fall. The main fall is 900 feet wide, and the banks above are wild and precipitous.

In the Northern tributary of the Mohawk—the West Canada Creek—is found Trenton Falls, containing five falls, and descending 200 feet in three-quarters of a mile.

These Falls are unsurpassed in beauty, and are visited by thousands.

### Delaware River.

The Delaware River rises in the Catskill Mountains, flows south into Delaware Bay. It forms a part of the Western boundary of New York, and is navigable to Trenton, 75 miles. It is a highway of transportation for coal and iron.

### Alleghany River.

Rises partly in Western New York and partly in the Alleghanies, flows South-west into the Ohio; it is the northern and main constituent of the Ohio; navigable to Olean, N. Y., 260 miles.

### Seneca River.

The Seneca river takes its rise in Seneca Lake, flowing through the outlet of Cayuga Lake, receiving the waters of the Clyde River, and discharging its waters into the Oswego River.

The inlet of Lake Oneida is the Wood River, and its outlet is the Oneida River, which unites with the Seneca and forms the Oswego River.

### Harlem River.

Harlem River separates Manhatten Island from the mainland, and merges into Spuyten Duyvil Creek, which connects Harlem River with the Hudson

thereby forming Manhattan Island. Through this estuary, tide-water flows, the currents meeting at or near Kingsbridge, about a mile from the Hudson.

### East River.

The East River extends from New York Bay to Long Island Sound; it is about 26 miles in length and forms a part of the Eastern boundary of New York city.

### Bronx River.

This river, in connection with East, forms the Eastern boundary of New York city.

### Croton River.

The Croton River is about 40 miles in length and discharges its waters into the Hudson. This river supplies New York city with water. The water is carried in an aqueduct built of solid masonry, and follows the course of the Hudson. The entire cost of the Croton works at their completion was $14,000,000.

### Water Falls and Gorges.

Among the most noted Water Falls are Lyon's Falls, in Black River, Lewis County, 63 feet; High Falls, in Warren County, 60 feet; Glens Falls, in Warren County, 50 feet; Ausable Falls, in Essex County, 100 feet; Buttermilk Falls, in Tonawanda Creek, Genesee County, 90 feet; Taghanic Falls, in Tompkins County, 230 feet; Enfield Falls in the same county, a series of Cascades, 230 feet; Fall Creek, also in Tompkins, having five Cascades and a fall of 500 feet within a mile; Chittenango Falls in Madi-

son County, 136 feet; High Falls, in Ulster County, 50 feet; and the Kaaterskill Falls in Greene County, with two Cataracts, one of 180 and the other of 89 feet.

In Schuyler County are found Watkins Glen and Havana Glen.

In Schoharie County is found a noted Cave, called Howe's Cave, that has been explored for five miles. It is situated upon the Albany and Susquehanna Railroad.

### Mineral Springs.

New York is noted for its numerous mineral Springs. Among medicinal springs, the following are places of resort: Saratoga and Ballston Springs, in Saratoga County; New Lebanon and Stockport, in Columbia County; Massena, in St Lawrence County; Richfield in Otsego County; Avon, in Livingston County; Clifton in Ontario County; Sharon, in Schoharie County; Chittenango, in Madison County; and Alabama, in Genesee County.

## *VII. Lakes.*

### Boundary Lakes

The lakes are a distinguished feature of this State. Numbers of these lie wholly within its borders; but the Great Lakes, properly so-called, lie on its borders.

### Lake Erie.

Lake Erie, on the West, is 268 miles in length and from 30 to 54 miles in width. Average depth 120 feet, and 564 feet above the mouth of the Hudson.

### Lake Ontario.

Lake Ontario is next in size, and is elliptical in form; it is 190 miles in length and 56 miles in width. Its entire Southern shore, east of Niagara River, is within New York State. Average depth 500 feet and 231 feet above the mouth of the Hudson.

### Lake Champlain.

Lake Champlain is a long, narrow sheet of water famed for its beauty. Its extreme length is 134 miles, with a breadth of from one-half to ten miles. Its waters are clear, deep and cold. Its depth in some places is 300 feet.

### Fort Ticonderoga.

This is a favorite place of resort for summer tourists, and is full of historic interest. The old fort, on the high bluff near the steamboat wharf, is in a dilapidated condition, but enough remains of its ruined bastions to make it a most interesting subject for the study of those who have any reverence for the memory of our early days as a nation.

### Inland Lakes.—Lake George.

"Horicon" (the Silvery Waters) is an Indian name often applied to this unrivaled gem of American lakes. The Indians themselves called it Can-i-a-dérioit—the tail of the lake. The French discovered it in 1609, and named it Saint Sacrément.

The entire number of Interior Lakes in the State is estimated at 650.

The whole Adirondack region is intersected and diversified by a net work of lakes and streams, which

render it picturesque and beautiful in an almost unequalled degree.

In this region of the State there are several hundred lakes; the principal ones are the Schroon, Placid, Raquette, Long, Cranberry, Upper Saranac, Lower Saranac, Tupper's, Chateaugay, Chazy, Peseco and Pleasant.

The most remarkable and important feature is a series of beautiful lakes lying in the transverse valleys of Central New York.

The following are the principal lakes of this region : Drained by the Genesee—Hemlock, Honeoye, Canadice and Conesus ; the first of these supplies the city of Rochester with water ; by the Oswego—Canandaigua, Keuka, Seneca, Cayuga, Owasco, Skaneateles, Cross, Onondaga, Otisco, Cazenovia and Oneida ; by the Susquehanna—Otsego and Schuyler ; by the Alleghany—Chautauqua.

### *VIII. Climate.*

New York State has a wider range of climate than any other state in the Union. In the interior there are great extremes of temperature.

The Ocean modifies the climate of the South-eastern part ; the Great Lakes modify the climate of the North-western and Western part ; the most extreme climate is found in the North-eastern part.

### *IX. On the Natural Advantages.*

1. *On the surface of the earth.*

(*a*) The soil in the valleys is very productive. The Mohawk Valley and its islands raise vast quantities

of broom-corn, supplying more than half the United States with brooms. The Genesee Valley raises vast quantities of corn and potatoes.

The Northern Counties, the high regions along the Hudson, and the Southern border are the chief stock and dairy districts; grain is the principal product of the rich terraces and lowlands of the west. Hops are chiefly produced in Madison, Oneida, Otsego and Schoharie; tobacco in the valley of the Chemung and in Onondaga and Wayne Counties; grapes and other fruits in the terrace region, in the Hudson Valley, and on Long Island. Near the City of New York market gardening and the supply of milk are very important interests.

(*b*) FORESTS.—Forests still cover a great portion of the State, and furnish a large amount of lumber. In the Southern tier of counties, and in the Adirondack region, pine, hemlock, and other evergreens are the principal trees. Other parts of the State have a great variety of maple, hickory, chestnut, ash, beech, pine, spruce, oak, elm, ash and locust.

(*c*) FACILITIES.—The facilities for transportation are abundant; the rivers, lakes, etc., affording means of easy transportation.

2. *Within the Earth—Minerals.*

(*a*) The most useful Minerals and Metals are found in the Eastern half of the State from Staten Island to Canada. The chief mines are in Orange, Dutchess, Essex, Clinton, Oneida and Wayne Connties. Limestone is abundant in the greater part of the State;

granite, slate, flag, bluestone and cement—the three last mentioned are found in Ulster County; and brick clay on the banks of the Hudson.

Lead, zinc, copper, arsenic, manganese, gypsum and water lime are found in considerable quantities.

Traces of gold are found in the rock formation on the East bank of the Hudson, near Poughkeepsie.

The salt springs of Onondaga County supply the most extensive salt works in the United States. The product in 1874 was 6,600,600 bushels.

(*b*) IN THE WATERS.—Cod and mackerel fisheries are extensively carried on off the coast of Long Island, and the rivers have been stocked with fish.

## THE METROPOLIS AND LEADING CITIES OF THE STATE.

### New York.

The population of New York city is 1,104,523. It is the first city of the Western Hemisphere in population, wealth and commerce, and destined to be the metropolis of the civilized world. It is situated on Manhattan and several smaller islands and the adjacent main lands. Manhattan Island is 13½ miles in length, and from 1 to 2 miles in breadth.

The extreme length of New York city proper is 16 miles, its greatest width 4¼ miles, and its area 41½ square miles, 22 being on Manhattan Island. It now includes a portion of Westchester county, inclusive to Bronx River.

New York is called the "Empire State" and the city the "Metropolitan City." It is not only noted for its extensive commerce and wealth, but for the number of its magnificient hotels, banks, churches and private dwellings, and for its Central Park.

Within a radius of 20 miles from the City the total population is nearly 2,000,000. Of this number, 560,000 are within the neighboring counties of New York, and 395,000 in those of New Jersey. 1,809,000 were within the radius of ten miles. These limits include many large manufacturing cities and towns, great commercial depots and thriving villages, whose chief interests are so closely connected with those of New York that these communities practically constitute an essential part of the metropolis. Twenty-seven steam ferries, twenty converging railways, and numerous steamboat lines, enable vast multitudes of those whose homes are in these outlying suburbs to attend to their daily business in the great city.

(*b*) *Advantages of Location.*

New York is pre-eminently a commercial city. In this respect it ranks among the most important in the world. Its harbor is of unsurpassed excellence. Lower Bay presents eighty-eight, and New York Bay about twenty-seven square miles of anchorage. The island has nearly twenty-five miles of water-front, and the suburbs at least as much more. Great numbers of steamboats ply on Long Island Sound and the Hudson; on the latter a single "tug" may frequently be seen with a "tow" of from fifteen to fifty barges, canal boats, and other craft. Many lines of ocean

steamers run to the chief ports of the West Indies, South America, Great Britain, France, Germany, the Netherlands, Belgium, and the Atlantic coast of the United States.

The port of New York has more than one-half of the foreign trade of the Union, and collects about two-thirds of all the duties on imports. The internal and coasting trade is also enormous.

**Brooklyn,**

in Kings County, is the third city in the United States in population. It is situated on East River and New York Bay, at the Western extremity of Long Island, opposite New York, and covers about twenty-one square miles. Its immense commercial interests and advantages are among its chief features. The city has a water-front of about eight and a half miles, entirely occupied with piers, slips, ferries, ware-houses and storage yards, and is one of the greatest grain depots in the world. The Atlantic Docks are a long four-sided basin in the South-western part of the city. The basin is twenty-five feet deep, and covers forty acres. It has about two miles of wharfage, and is surrounded, except at the entrance, by storage houses, substantially built of granite and brick, and covering twenty acres more. South of this are the Erie basin of sixty acres, and the Brooklyn basin of forty acres. The value of the articles stored in the various warehouses of the water front has in some years exceeded $260,000,000, embracing every variety of staple domestic and imported produce, grain being the chief item.

Brooklyn is connected with New York by twelve steam ferries, which ply day and night. In 1872 they conveyed over 60,000,000 passengers and an enormous number of loaded vehicles. The two cities will soon be more closely connected by a gigantic suspension bridge, now in great part completed. Two massive stone piers, 268 feet high, and built on the opposite margins of the river, will support four cables of steel wire, each sixteen inches in diameter. These cables will sustain the roadways. The bridge will be 85 feet wide, its central span from pier to pier 1,595 feet, and its total length about 6,000 feet.

**Buffalo,**

a city of Erie County, is situated on a gently sloping plain at the Eastern end of Lake Erie, at the head of Niagara River, and at its junction with Buffalo River. It has an extensive system of beautiful public parks, connected by broad boulevards. A tunnel supplies the city with pure water from the middle of the bed of Niagara.

The situation of the city, and its facilities for the reception and transportation of merchandise, make it a very important commercial centre. It is the terminus of the Erie Canal, of several of the most important of trunk railroads, and of the navigation of the upper lakes. It has a water-front of two and a half miles on Lake Erie, and of equal length on Niagara River. Its harbor, which is one of the best on the lakes, has three divisions, and is protected by extensive breakwaters.

The city has an immense traffic, grain being the

leading item, Only second to this is the trade in live stock. It is also largely engaged in shipping coal to the Central States and Canada. Its manufactures are important. Iron manufactures in great variety constitute the chief industry. All of the iron vessels on the Great Lakes were built at Buffalo. There are numerous tin, copper and sheet-iron works, brass founderies, furniture, barrel, and boot and-shoe factories, carriage, wagon, and car shops, flour mills, tanneries and breweries.

**Albany,**

a city of Albany County, is the capital of the State. It is favorably situated for commerce on the west bank of the Hudson, near the head of tide-water and of navigation. It is also the terminus of the Erie-Canal and of five railroads. The city is a great grain market, and the chief lumber market of the State Among the public buildings and noted institutions are the State Library, the Geological and Agricultural Hall, the State Normal School, the State Hall, and the City Hall. The new Capitol, a vast granite structure yet unfinished, will be the most splendid public building in America excepting the Capitol at Washington. Population 86,013.

**Rochester,**

a city of Monroe County, is situated on Genesee River, seven miles from Lake Ontario, at the junction of the Erie with the Genesee Valley Canal and of the New York Central with several other railroads. Besides the large railway traffic, there is considerable export and import trade with Canada.

Within the city limits the river has three falls of 96, 25 and 84 feet, and furnishes an enormous amount of water-power. The chief products are flour, clothing, boots and shoes, leather, furniture, carriages and wagons, iron castings and machinery. Rochester is surrounded by a very fertile country, largely occupied with nurseries of fruit and ornamental trees. Some of these nurseries are among the largest in the world. Population, 81,673.

**Troy,**

a manufacturing city of Rensselaer County, on the East bank of the Hudson, six miles above Albany, is at the head of tide-water, and of steam navigation, and at the principal outlet of Erie and Champlain Canals. It is the center of five railroads. Its iron and iron manufacturers are among the most important in the United States. They embrace every form of iron and steel, of iron and steel castings, and of wrought, hollow, and pressed ware. Troy is also the chief seat of the shirt and collar manufacture, and has a large lumber trade. It also manufactures bells, mathematical instruments, and linen goods. Population, 48,821.

**Syracuse,**

is a manufacturing city of Onondaga County, at the head of Onondaga Lake and at the junction of the Erie and Oswego Canals. It is an important railroad centre, having seven diverging lines. Salt is the chief interest. Among the great variety of manufacturing establishments are blast-furnaces, steel works, and rolling-mills. The product has reached $14,000,000 a year. Population, 54,396.

**Utica,**

a city of Oneida County, is at the South bank of the Mohawk, at the junction of the Erie and Chenango and of the New York Central and several other railroads. It is noted for its extensive cheese trade. Its various manufactures have amounted to $8,000,000 a year. Population, 32,070.

**Oswego,**

a city of Oswego County, is beautifully situated on Lake Ontario, at the mouth of Oswego River and on the Oswego branch of Erie Canal. It has a delightful summer climate, well-shaded trees and many handsome buildings, and is the seat of a State Normal and Training School. Four railways give communication with other parts of the State, with Pennsylvania, and the West. Daily lines of steamers run to the St. Lawrence, Niagara, Toronto, and Chicago The harbor affords three miles of wharfage on the lake and river, and is protected by extensive breakwaters. The city is a great grain depot and has a large trade in Canadian barley and lumber, and in Pennsylvania coal. Oswego River falls 110 feet in twelve miles, 36 feet within the city limits, and affords extensive water-power. There are many flouring-mills and iron-works, ship-yards, and the most extensive starch-factory in the world. Population, 22,455.

**Elmira.**

a city of Chemung County, is situated on both sides of Chemung River and on the Erie and Northern Central Railways. It is handsomely laid out in a broad and

fertile valley. Newton Creek, a branch of the Chemung, furnishes abundant water-power. It has rolling-mills and other iron-works, flour-mills, breweries and tanneries. Among other productions are boots and shoes, agricultural implements, edge tools, and carriages Population, 20,538.

**Kingston,**

a commercial and manufacturing city of Ulster County, is situated on the Western bank of the Hudson and on Rondout Creek, which forms its harbor, and is here navigable for three miles. The city is the terminus of the Delaware and Hudson Canal and of two railroads. It has four miles of wharfage, and employs a large number of steamboats and barges in the river trade. It is the centre of the ice industry, one of the most important on the Hudson. Hydraulic cement, for which Ulster is noted, is shipped to the amount of 1,500,000 pounds a year. Besides this there are immense amounts of coal brought by the canal; also blue stone, bricks, lime, and lumber. Population, 20,474.

**Poughkeepsie,**

a city of Dutchess County, is mostly situated on high land on the East bank of the Hudson River. It is the largest city between New York and Albany, and is connected with those cities by the Hudson River Railroad and several steamboat lines. The Poughkeepsie, Hartford and Boston Railroad connects it with New England. A great railroad bridge across the Hudson is about to be constructed. The city has

an important trade with the neighboring farming district, a large river trade, and extensive manufactures. It has a rolling-mill, iron furnaces, and foundries, and ship-yards. From its educational advantages it is sometimes called the "City of Schools." Vassar College, for young ladies, is about two miles East of the city. Population, 19,859.

**Auburn,**

is a manufacturing city of Cayuga County, on New York Central Railroad and Southern Central Railroad, two miles from Owasco Lake, on its outlet, which supplies one of the best water-powers of the State; nine dams; falls 160 feet within city. It manufactures cottons, woolens, carpets; reapers, machine-shops, tool-factories, flouring-mills, and mowers and other agricultural implements; and has breweries. Valuable lime-stone quarries are within the city limits. It is handsomely built on high, uneven ground. Population, 18,359.

**Cohoes,**

is a manufacturing city of Albany County, at Cohoes Falls, and on the right bank of the Mohawk at its confluence with the Hudson, and on Erie Canal near its junction with the Champlain Canal; it has two railroads. The Mohawk falls 120 feet in a mile and a half, 70 feet just above the city, and is remarkable for its picturesque beauty, besides being one of the best water-powers in the United States. Very large cotton-mills. Knit-goods a prominent industry. Cohoes produces about one-third of all hosiery made in the United States. Population, 17,516.

**Newburgh,**

a city of Orange County, on a plateau and steep slope on West bank of the Hudson. Terminus of branch of Erie Railway. Ferries to Fishkill, and to Dutchess Junction on Hudson River Railroad; terminus of New York, Boston and Montreal Railway. Important trade with rich agricultural country; river trade; ships cattle, milk, butter, fruit, etc. Manufactures extensive: machinery, castings, brass, carpets, cotton-goods, paper, soap, and cement-pipe. Noted for containing Washington's headquarters, and as the place of the disbandment of the army of the Revolution. Population, 17,327.

**Yonkers,**

a residential city of Weschester County, on East bank of the Hudson, adjoining New York City. Beautifully situated on rising ground opposite the Palisades. On Hudson River Railroad and two others. Nepperhan, or Saw Mill River, furnishes water-power. Considerable manufacturing. Population, 17,327.

**Long Island City,**

a city of Queens County, near the Western end of Long Island, opposite New York, has ten miles of water-front on East River and Newtown Creek. Wide streets and avenues. Two ferries. Terminus of three railroads and freight depot of another. Great depot for storage and shipment of kerosene. Lumber-yards, oil-refineries, pianos, carriages, jewelry, etc. Population, 15,609.

**Binghamton,**

a city of Broome County, at junction of Susquehanna and Chenango Rivers, and on Chenango Canal and Erie Railroad at junction of three others. Handsomely laid out. The Chenango furnishes water-power. Numerous manufactures; flour and lumber. Population, 15,550.

**Schenectady,**

a city of Schenectady County, on the South bank of the Mohawk and both sides of Erie Canal. On New York Central and three other railroads. Largely engaged in manufacturing. Broom factories, engine and boiler, locomotive, and other iron works; knitting mills. Seat of Union College. Population, 12,748.

**Lockport,**

a city of Niagara County, on Erie Canal and New York Central Railroad. In rich agricultural district. Large quarries of excellent limestone and sandstone. Erie Canal here falls 60 feet by six locks; surplus water furnishes three quarters of a mile of hydraulic canal and immense water-power. Flour, saw, cotton, and woolen mills. Population, 12,624.

**Rome,**

a city of Oneida County, on West bank of Mohawk, at junction of Erie and Black River Canals, and of New York Central with two other railroads. Wide shaded streets; public and private parks and fountains. Large general trade. Numerous manufacturing establishments. Site of Fort Stanwix and Battle of Oriskiny. Population, 11,922.

**Ogdensburg,**

a city of St. Lawrence County, on St. Lawrence River at junction of the Oswegatchie, and four miles above the rapids. Regularly laid out and handsomely built. Called the "Maple City" from its many and beautiful shade trees. Ferries to Prescott in Canada, and a line of many steamers to Chicago. Foreign and domestic commerce both important. Receives immense quantities of grain and lumber. Excellent water-power; flour, lumber, shingles and staves. Population, 10,076.

**Watertown,**

a beautiful commercial and manufacturing city of Jefferson County, on Black River, ten miles from its mouth in Lake Ontario. Large trade with rich agricultural country, abounding in iron and limestone. Railroad connection with New York and the coal regions. Abundant water-power. Black River falls 112 feet in two miles within the city limits. Flour, lumber, printing paper, and many other manufacturies. Population, 10,041.

**Hudson,**

a city of Columbia County, beautifully situated on high ground on East bank of Hudson River, at the head of ship navagation, 116 miles from New York. On Hudson River Railroad at terminus of Hudson River and Boston Railroad. Connects with New York Central by a branch. Large trade; pressed hay the leading article. Extensive manufactures of iron and of iron machinery, goods and .wares. Population, 8,828.

## ORAL GEOGRAPHY.

### State of New York.

1. Map and bound the entire State.
2. How many counties in the State?
3. What is a State?
4. What is a County?
5. Where was the first settlement in New York made?
6. By whom?
7. Whence did they come?
8. In what year? 1614.
9. Where did they locate?
10. Was the State inhabited previous to that time?
11. By whom, and what became of them?
12. Describe Lake George.
13. Describe Lake Erie.
14. Describe Chautauqua Lake.
15. Describe Lake Canandaigua.
16. Describe Crooked Lake. (Keuka).
17. Describe Seneca Lake.
18. Describe Cayuga Lake.
19. Describe Owasco Lake.
20. Describe Skaneateles Lake.
21. Describe Oneida Lake.
22. Describe Otsego Lake.
23. What river is the outlet of Lake Erie?
24. Of Lake Ontario?
25. Of Lake Champlain?
26. What outlet has Canandaigua Lake?
27. Crooked Lake?
28. Seneca Lake?

29. Cayuga Lake?
30. Owasco Lake?
31. Oneida Lake?
32 Skaneateles Lake?
33. Lake George?
34. What river receives the waters from the central lakes?
35. In what direction do the waters of each lake flow?
36. What lake between Vermont and New York?
37 What lakes between New York and Canada?
38. Describe Niagara River.
39. Mohawk River.
40. St. Lawrence River.
41. Genesee River.
42. Harlem River.
43. East River.
44. Hudson River.
45. Through what counties does the Mohawk River flow?
46. Of what is Mohawk River a Branch?
47. What is a branch?
48. What river flows into the east end of Lake Ontario?
49. What mountains in New York?
50. Where are the Adirondack mountains?
51. Where are the Catskill mountains?
52. Where are the Highlands?
53. Which is the highest mountain in New York?
54. Its elevation?
55. What bay in the southern part of the State?

56. Where is Manhattan or New York Island, and what waters surround it?

57. Staten Island?

58. Long Island?

59. Goat Island?

60. Thousand Islands?

61. What Island west of Long Island?

62. What Sound between Long Island and Connecticut?

63. Describe the Erie Canal.

64. Genesee Valley Canal.

65. Oswego Canal.

66. Chenango Canal.

67. By what railroad would you travel from Utica to Binghamton?

68. What canal crosses the State?

69. Its length? 364 miles.

70. What waters does it connect?

71. What city at the east end?

72. What city at the west end?

73. On what canal can you sail from Lake Erie to Lake Ontario?

74. On what canal do you sail from Lake Erie to Hudson River?

75. On what canal do you sail from Syracuse to Oswego?

76. On what water can you sail from New York to Albany?

77. On what water can you sail from Albany to Buffalo?

78. How many cities in the State of New York?

79. Locate and describe the following cities, and give the population of each :

| | |
|---|---|
| Rochester, | Auburn, |
| Syracuse, | Utica, |
| Troy, | Schenectady, |
| Albany, | Poughkeepsie, |
| Elmira, | New York, |
| Brooklyn, | Rome, |
| Buffalo, | Binghamton, |
| Hudson, | Kingston, |
| Long Island City, | Lockport, |
| Newburg, | Ogdensburg, |
| Oswego, | Watertown, |
| Yonkers, | Cohoes. |

80. What city of New York is the seat of government ?

81. Mention the the State buildings in Albany.

82. How many State Senators convene at Albany ?

83. Their term of office ?

84. How many Assemblymen ?

85. Their term of office ?

86. What constitutes our Senatorial District ?

87. What constitutes our Assembly District ?

88. Give the population of the State.

89. Its area in square miles.

90. In the basin of what great rivers is New York?

91. Trace those rivers on the map.

**How to Draw the Outline of New York State.**

The first point will represent the north-eastern extremity of New York. Name it "1 ;" the second point one inch below the first, name it "2 ;" the third

point one inch below the second, name it "3;" the fourth point one inch below the third, name it "4;" one inch at the left of point "3" a point, name it "5;" two and a fourth inches to the left of "5" a point, name it "6;" one-half an inch above "6" a point, name it "7;" one-half an inch to the right of "7" a point, name it "8;" one-fourth of an inch above "8" a point, name it "9;" place a point mid-way between "9" and "2," name it "10;" one-half of an inch above "10" a point, name it "11;" three-fourths of an inch at the left of "1" a point, name it "12;" place a point mid-way between "2" and "3," and a point mid-way between "3" and "4;" one and one-fifth inches to the right of point "4" and a little above, a point, and name it "13;" this point will indicate the eastern extremity of Long Island.

**Blackboard Outline.**

The unit of measurement may here be 10 inches. Whatever length the unit may be, it represents the length of Lake Champlain, which is 134 miles.

From 2 to 3, from 3 to 4, and from 3 to 5 each are equal to the first distance. The Northern boundary of Massachusetts is midway between 2 and 3.

From 5 to 6 is two and one-fourth times the first distance, and it is in line with the Southern boundary of Massachusetts. From 6 to 7 and from 7 to 8 are each one-half of first distance. Lake Ontario extends as far West as the State; its Eastern shore is midway between the Niagara River and the Eastern boundary of the State, and the distance between the

Southern shore and the Southern boundary of the State is three-fourths of the first distance. The width of Lake Ontario is one-half of the first distance. From 1 to 12 is three-fourths of the first distance.

*Suggestions to the Teacher.*

The teacher should draw the map on the blackboard to a certain scale, and require the pupils to draw the same on the blackboard, slates or paper. The teacher should furnish a measure for the children, and require them to reproduce a correct drawing of the map. Measures either six inches or one foot long, as desired, may be obtained of Davis, Bardeen & Co., Syracuse, for $1.00 a hundred

The physical features should be represented first; these and other conditions are antecedent to the facts of descriptive geography.

**Helps in Teaching Geography.**

In teaching the geography of New York State, the first requisite is a good Map of the State. Of late years this has been difficult to procure. The map drawn by John H. French and published in 1858 by Robert Pearsall Smith, is now scarce and costly, as well as old. A new map has just been published, however, three and a half feet by four, giving county boundaries and with the towns brightly colored. It costs $2.00, and should hang in very school-room in the State.

For young scholars, and indeed for older ones too, Dissected Maps are of great value. Two of these

are published at 75 cents each, one of New York State, cut up into counties, and the other of the United States, cut up into states. To properly place these counties and states impresses their relative positions very effectively.

Of books relating to the history and characteristic features of New York State, the Historical and Statistical Gazeteer, published at the same time with French's Map, is now scarce and out of date, and no similar work has since been published. The History of New York State, by S. S. Randall, formerly Deputy State Superintendent, will be found interesting and of great value. The price is $1.50.

The Natural History of the State of New York, in twenty-two large quarto volumes, profusely illustrated, is indeed a magnificant work, having cost the State some $500,000. Complete sets are rare, and worth $100.00 or more; but separate volumes in Zoology, Botany, Geology, etc., can frequently be purchased at comparatively low rates, and should be eagerly studied by the teacher.

Any of the above may be purchased of Davis, Bardeen & Co., Syracuse, N. Y.

# HISTORY.

## INTRODUCTION.

Our schools can permit their pupils to devote but a small portion of their time to the study of history. If all other studies were neglected, a life time is much too short to acquaint one's-self fully with all the facts of history.

The facts of history comprise the sum of the events that man has brought about in all the teeming centuries since first he inhabited the earth. The number is beyond the power of imagination to conceive, and Historians do not attempt to enumerate them. They describe some of the grandest and most interesting features of a nation's life, and leave the rest to be inferred or forgotten.

### Study the Causes.

History describes the past conditions and actions of men, and investigates the causes which have operated to produce them. History should be taught from a series of progressive stand-points.

In the history of every nation there are certain prominent events from which as centres other minor events have seemed to emanate, and to which they bear reference. It is only of these great events

that we need to know the dates or the minute particulars. It is a useless waste of time and labor to commit to memory a great number of dates to be speedily forgotten. Only such dates should be committed to memory as are indispensible as landmarks in history. The sequence of events, rather than the precise date of each, is what is chiefly necessary.

### Ordinary Methods Useless.

The teaching that goes under this name in schools is generally a farce. It consists usually in stringing together the names and dates with a few facts of the least important kind. Or, if more is attempted, it is reading in a text-book; in which case generally there is little within a child's sympathy or comprehension, and together are often jumbled, without purpose or method, facts of the most diverse kind, from which it is impossible to gain a clear conception of any of its elements. When such an array of facts are given as a whole to a child, they can produce nothing but embarrassment.

### Conditions Under which Taught.

The conditions under which history is likely to be taught must be fully understood before determining what to attempt or how to attempt it. When school life is short, little, if anything, can be done. Reading, writing and arithmetic must be taught; if the pupils remain in school a few years instead of a few months teachers may be able to give one or two lessons weekly; these should be oral lessons. If they pass through the grades they should take it up as one of

the regular studies. In our common schools much time cannot be given to it consistently with the claims of other studies ; yet it should receive attention and a certain number of lessons should be given every term.

### History of Their Own Country.

A knowledge of the history of their own country is about all that can be expected of pupils in our common schools, but in the higher schools it should be extended to universal history.

No one can well do without this knowledge, and to the citizens it seems indispensable. The law should require the history of the United States to be taught in every school.

### Intellectual Discipline.

The study of history furnishes a valuable intellectual discipline. To this end a simple preliminary outline sketch should be carefully fixed in the minds of the pupils. We would refer the teacher to the lessons on history.

### Moral Influence.

History presents many examples of good and great men and women who honored by their noble deeds the age and country in which they lived.

Moral examples have more influence upon the young than moral precepts. The heart is more easily moved to virtue by incidental teaching than by direct teaching. The great deeds of the past have been done by beings like themselves, and they cannot resist the desire to know them. In this study

they see life; in other studies they come into the possession of interesting facts and principles by observation and by experiment.

The history of such men as Washington, Franklin, Lincoln, and scores of others, will prove an incentive to American youth, and the moral seeds sown in open hearts will germinate and eventually produce rich fruit.

### Little Interest in the Study.

The reason why pupils take so little interest in the study of history is principally on account of the fragmentary manner in which the subject is presented in our text-books. Lessons in history should be assigned by topics, and not by pages. All verbatim recitations of sentences and paragraphs should be strtctly forbidden, and the pupils should be required to state the facts in their own language.

### Necessity of a Knowledge of History.

It should be taught as a methodical record of important events. To every American citizen some knowledge of the history of his country is useful; he should know of the founding, progress and growth of liberty in his own country. Towards the preservation of good government and the permanency of our institutions, it is necessary that the principles of government and the leading events of history be taught in our American schools.

The idea of national unity and patriotism should rise above the stripes of party and the turmoils of war, and plant itself as the one thing vital to American

institutions. That the subject of history may secure attention from the teacher, and study from the pupils, is the sincere wish of every loyal American citizen.

### Methods of Teaching History.

*I. Directions.*

1. Interest the pupils by a familiar talk.
2. Examine the lessons with the pupils.
3. Draw maps and locate important places.
4. Let the maps be examined and criticised.
5. Bring out the prominent, salient facts, with clearness.
6. Require pupils to classify and tabulate the lesson, and recite from the tabulation.
7. Do not require dates too freely.
8. Let the pupils state the causes of the different wars, and their effects.
9. Teach history as a methodical record of important events.
10. An Objective Representation should be given by means of maps and charts; drawings and diagrams should be placed on the board of all the important matters in the history of the nation.

### History, (Model Form.)

*I. Directions.*

1. What event?
2. What causes?
3. What battle?
4. What time?
5. What place?
6. What persons?

7. What means?
8. What losses?
9. What results?

Taking the directions for the model form, we have the following lesson: *History of the Battle of Bunker Hill.*

1. What event? Revolutionary War.
2. What causes?
   - 1. Remote
     1. Rights of arbitrary government claimed by the British.
     2. Character of the King George III.
   - 2. Direct.
     1. Importation Act.
     2. Stamp Act.
3. What Battle? Bunker Hill.
4. What time? 1775, June 17th.
5. What place? Breed's Hill.
6. What persons?
   - American Generals.
     - (*a*) Gen. Ward.
     - (*b*) Gen. Prescott.
     - (*c*) Gen. Putnam.
     - (*d*) Gen. Warren.
   - British Generals.
     - (*a*) Gen. Gage.
     - (*b*) Gen. Howe.
     - (*c*) Gen. Clinton.
     - (*d*) Gen. Burgoyne
7. What means?
   1. American—limited.
   2. British—unlimited.
8. What losses?
   1. American—
      115 killed, 305 wounded and 32 prisoners.
   2. British—
      1054 killed and wounded.

9. What results?
   - 1. American.
     - 1. Remote—Gaining our Independence.
     - 2. Direct—Encouraging.
   - 2. British.
     - 1. Remote—Defeated.
     - 2. Direct—Discouraging.

This model form may apply to a period of our country's history, or to a battle of that period.

Associate, as far as possible, geographical knowledge with the historical.

**Tabulated Forms.**

1. Discoveries and Explorations.
2. Settlements.
3. Wars and Adjustment of rival claims, culminating in the birth of the nation.
4. Period of Presidents.

**Reviews.**

1. Chronological.
2. Biographical.
3. Geographical.

The review should take three distinct forms. In the Chronological, the pupil should state all of the principal dates; in the Biographical all that has been learned in regard to particular individuals; and in the Geographical, whatever he can state of all important facts relating to the history of a locality.

These reviews may be made spirited exercises, by requesting the class to write a few of the essential dates, the sequence of important events, the names

of important individuals. The system of the reviews above suggested must, if faithfully carried out, result in a thorough unifying of the general subject of history.

### Incidental Lessons.

Many of the facts of history may be given in reading, and especially in geography lessons. Such facts would embrace pictures of social condition, growth of manufactures and of populous districts, actions that have made celebrated, particular places, and incidents in the lives of remarkable men.

Such facts are to be given that the mind, furnished with some of the material of history, may pursue with more advantage to itself its systematic study.

Lessons on any subject are thus more adhesive than when given to a mind entirely ignorant of it.

Remarks.—In all your teaching the principle of proceeding from the known to the unknown must be followed. A clear picture of the present must be drawn, embracing, in their order, all of the above particulars. The method, whatever it may be, should quicken the pupils' observation, and lead them to see some importance in the matters of every-day life. Every succeeding lesson should bring up vividly the condition of man in the past, and compare it, in its several particulars, with things now. This will make more and more evident how great has been the change, and how much for the better. The pupils should see how events, both great and small, have contributed to the prosperity and the advancement of the people.

### Aim in Teaching History.

The aim might be to cultivate the intellect, for which it has rich and varied matter adapted to exercise each of its faculties.

The aim in teaching history should be to inculcate those moral lessons which it is the office of history to teach by example. What, for instance, could be better adapted to produce a spirit of contentment and thankfulness, than a clear knowledge of the present condition of our country, with its superiority over that of other nations? What better opportunity can be desired for showing and enforcing the necessity of character and skilled industry than is afforded, while tracing the improvements and the progress of our nation for the past one hundred years?

# ELEMENTARY NATURAL SCIENCE.

## INTRODUCTION.

Can the Natural Sciences be profitably taught to the average pupils in our schools? Our first inquiry leads us to distinguish between the natural and the artificial studies to which the children are introduced.

The child's mind is an instrument for acquiring rather than using knowledge. He voluntarily begins the study of nature. Here he goes to school long before his parents send him. He touches with child-hand many forces, and tries to grasp them. His studies are natural, for they are in the order of his mental developement. Study is play; play is study. The objective part of mathematics unfolds to him the shapes and numbers of things. He begins physics with the weight of his toy, or watching the ripple and dash of brook, or the whirl of the water wheel. He opens his botany when he plucks a flower, distinguishing color and form. He notices the material of rocks, and gathers various stones like a zealous mineralogist.

A child confined as most of our pupils are to the reading, writing and arithmetic method of discipline,

might as well be brought up in a desert as in the world of beauty and power which surrounds him. His eyes are gradually closed to a thousand alluring truths; his ears are dulled to the myriad voices of nature. It is a just inference from these considerations, and an acknowledged fact, that, to a majority of pupils in the public schools, the acquiring of knowledge is uninteresting and positively irksome.

But right teaching requires that the child's powers of knowing accurately, should be developed, and hence should begin and largely continue with his senses. Words and number, over which so much time is spent in reading, spelling and arithmetical problems, are valuable to his mental development, as they are associated with things really known. Hence the elements of science furnish the proper material for such study. Knowledge is not power to the child, if it is abstract. He cannot use knowledge which lies beyond the sphere of his daily observation and experience. What the State needs is intelligent citizens, and intelligent youth from whom they can be made. These come of the power of knowing and judging accurately. We claim for the Natural Sciences this effect on the child. They deal with facts more sensible than those of arithmetic. The parts of a leaf or a flower are definite, easily comprehended, and classified with certainty. This is true of the nature and species of the common animals, shells and insects, the constituents of a stone, the qualities of an acid or gas, the history of a rock traced in forms of life, the nature and effect even of geological changes.

No wide range of knowledge is required to under-

stand definitely and surely scientific facts simply presented to the youthful mind. It easily comprehends them as a whole. We claim, therefore, that to whatever degree the reasoning faculties should be developed to furnish the child-mind with power, this is best secured by its reasoning on facts and things rather than on ideas of the imagination, or history, or morals, to which children's studies are usually confined. The last knowledge gained by man is the correct understanding of human nature, or the causes of human actions. The sciences teach the relations of cause and effect in their clearest manifestations. With enlarged comprehension the child may learn the secondary character of causes He will trace their relation to effects with the certainty of conviction to his mind. Thence will be imparted the element of *positiveness* to the pupil's acquirements and habits of character. He learns to act unwaveringly on what he knows, and to know positively that upon which he acts. Correcting by his own observations the conclusion to which he is lead by the inductive methods of scince, he gains independence in thought with that confidence in his own powers of judging which are the safeguards in his character and of his rights as a freeman under our republican institutions

Thus early introduced to the elements of science, the foundations of his character as a citizen are more broadly laid. The child becomes more excursive in thought, more inventive through familiarity with the mechanisms of nature, and more appreciative of the wealth and beauty of his country's resources. Taught to observe, he never ceases to be affected by the

changing lines and hues in nature which his daily vision embraces, and the elements of a true esthetic culture find place in him which will add to his certain worth and power as a citizen. The old idea that knowledge is for discipline is faithfully maintained in our education. Yet knowledge is one of the natural desires of the mind. The true science of education will make it a pleasure. This will require for the senses larger opportunity than they now enjoy Moreover, we owe to the State and its free institu tions, to raise the standard of intelligence and culture among the people, among mechanics, farmers, merchants, and laborers in the mill or the street. A discernment of the true nature and qualities of things in their daily use will secure this far better than drills in spelling, arithmetic and grammar. The mass of our citizens are not intelligent enough to understand one-half the instruction contained in a good weekly newspaper.

We make, therefore, this demand for the sciences —first, that they have an equal place with the usual studies of primary and grammar and district schools; secondly, that our teachers be required to make plain the elements of the sciences to pupils below fourteen years of age, at the expense of rote-drills and problems in arithmetic, grammatical analysis, spelling without definitions, and the time spent in preparing for pretentious written examinations, imposed at too early an age, that have become one of the worst abuses of an artificial system in public-school work.

We are concerned next with the *methods* of teaching these sciences in district schools, or grades below

the high school. The efforts of authors of elementary text-books in science are not entirely successful; most of them are still too technical. There is less vividness in the statement of the facts of science, less personification and idealizing of the study than a child's apprehension demands. The ancients taught their children the forces and sounds and shapes of the waters and fields and forests, by personifications of nymphs and dryads, gods and godesses, in whose histories and habits they were personally interested. So should the stories of insects, fishes, mollusks, birds, and well-known animals, or of plants and stones, be told without text-books by the teacher, with scientific truthfulness as to their modes of life and motion. Thus children would become familiar with their living forms. With text-books still defective, the teacher's opportunity lies in what President Hill calls the incidental method. Let her have specimens of minerals, leaves, insects, flowers, pictures of birds and animals, and simple apparatus for illustrating chemical and physical forces, in order to make real to her classes the subjects of the lesson. By a hundred well-selected stereoscopic pictures she could teach physical and political geography as effectively as the shapes, circles, and seasons of the earth by a globe. Thus the text-book in the hands of a suggestive and excursive teacher will become secondary to her personal power to make knowledge real and interesting to the youngest pupils in her classes. Yet the text-book in science will give the study equal dignity to the arithmetic in the mind of the scholar,

while it corrects the unscientific or garrulous tendencies of the teacher.

Moreover, no other studies will so naturally develop the personal power of the teacher. Proceeding by the method of nature, step by step from the known to the unknown, she will awaken enthusiasm in the class, and from the fulness of her devotion to the subject there will be an overflow into the minds of the pupils. Rote-teaching in these elements of science is utterly defenceless. Every class of facts and every principle involved should have illustration from the wide range of nature. The *living* way of Sauveur in language, should be applied to the sciences. Every sense and power of the child can be grasped and applied to them by the live teacher.

**Chief Purposes of Object Lessoos.**

The *chief purposes* of the object lessons are two: first, to cultivate habits of careful observation and reflection; and second, to give facility in oral description. When properly given they involve the systematic discipline of the perceptive faculties and of the judgement, the imagination and the memory of facts, and in the use of language.

The *method* that should be pursued is that known as the objective method. This presents two distinct though intimately related departments; *perceptive* teaching, in which the object, as an acorn, an egg, a leaf, or a piece of coal, is directly presented to the pupil's senses; and conceptive teaching in which impressions previously received are recalled, arranged and utilized, the objects themselves being presented

to the senses during the lesson. A lesson upon an oak, an elephant, or a thunder storm would fall under the latter department. The use of pictures, models, or other sensible representations of objects, is an important combination and modification of the two departments.

*Definitions* should be very sparingly introduced, and never in the first stages of a subject. If given at all, they should sum up knowledge already attained. They should be as brief as possible and should be carefully prepared for by a process at once inductive and objective. The words organic, inorganic, vegetable, animal and mineral, are prominent among the very few terms requiring definition. In every stage of the lessons, with the exception of a few indispensable definitions, the language used by the pupil should be entirely his own, and all set forms of words should be carefully avoided. "Familiar objects," and familiar animals, plants and minerals should take precedence of all others in the selection of topics.

The *process* employed will necessarily present two distinct stages in accordance with the two chief purposes of these lessons already referred to. The first may be called the analytic or preparatory, and furnishes the principal discipline of the powers of observation and reflection. In this stage, which is largely conversational, the teacher leads the pupils by questions or otherwise to discover or remember the properties or peculiarities of an object, or to state any other important facts associated with it. The points thus considered should be written upon the black-

board in very brief synoptical form, but each only *after* it has been dwelt upon.

The vital element in this part of the work, that which gives it a living interest to the pupil, is the discovery or learning of new facts or the gaining of new ideas about the object under consideration. It is evident that from the nature of the case this important element must be chiefly limited to the first presentation of the object. Reviews, although for certain purposes indispensable, soon become, at least as far as this element is concerned, much like "a thrice-told tale." This makes it all the more important that the teacher should have an outline of the lesson carefully prepared beforehand, so as to be sure to include the points most likely to be interesting and instructive. Any additional point or fact afterwards drawn from the class may be readily incorporated.

It should also be remembered that the effort to "develop the perceptive powers" of children has its limit, especially when applied to large classes. In teaching a little group of four or five, comparatively little difficulty should be found by the skilful teacher. But when the class ranges in number from forty to sixty in the grammar school, and to seventy-five in the primary, and when at the same time owing to the pressure of the other and more directly important exercises of a graded school the time given to oral lessons is limited to a very few minutes, it is very evident that the problem is a very different and a much more formidable one.

In the first lesson upon any given object or phe-

nomenon, unless great care is taken to prevent it, a few pupils of naturally quick perceptions will give most of the responses, and the rest of the class will thus be as really "told" by their classmates as if the information had been given by the teacher.

It is true that in both cases there is an exercise of the perceptive faculties; but it is obvious that the mental condition in which we follow and verify a statement made by another is usually one of far less vigorous and profitable activity than that in which we discover a fact of ourselves. The former may be called the perception of discovery, the latter the perception of verification. Nevertheless, from the very nature and condition of class-teaching, the lower and less profitable form of the mental exercise will be the predominating one. The methods of reducing this evil to a practical minimum will be obvious to the experienced teacher. It is also well for us to consider how large a part of what we call our own knowledge has become ours only through our verifying the statements and perceptions of others.

The processes and results of this first or preparatory stage of the work, important and interesting as they may be, are entirely subordinate to the second stage. The preparatory stage collects the *material* for the work that is to follow: the lumber, lime, bricks and stone for the edifice that is now to be constructed with them.

**Subject—Salt.**

Let us suppose that the subject of our lesson is Salt. The teacher has given the lesson with due attention to the requirements of the objective method.

The qualities, as learned by the senses, the kinds, uses and sources of salt have been considered. To these points have been added the chief source of our own supply, the singular fact that it is a mineral food, its necessity to the health of the body, a brief reference to its ancient use as a symbol of hospitality and to certain superstitions which still cling to it, together with such other simple and interesting facts as seemed appropriate.

In that stage of the lesson which we have now reached, the chief discipline is of the memory of facts. "What do you know or remember about salt?" should be the teacher's only question, except when an error is made in the statement of facts, when a proper question or two should lead to its correction, not by the teacher, but by the class. The points as written upon the blackboard in the order in which the pupils remember them will be something like the following, omitting the prefixed numerals, which will presently be explained:

*Salt.*

| | | |
|---|---|---|
| 3. Taste, | 9. Springs, | 6. Made into Soda, |
| 4. Seasoning, | 10. Ocean, | 2. Soluble, |
| 1. White, | 11. Sparkling, | 13. Hospitality, |
| 7. Kinds, | 12. Granular, | 14. Superstitions, |
| 8. Mines, | 5. Preserves meat and fish. | |

The next step is to have the class, not the teacher, condense and arrange this miscellaneous list of items into a brief and orderly synopsis. This is a point of prime importance, but is so simple in practice that any ordinary class will need but one illustration in order to apply the principle. With beginners this

will be best understood by illustrating with some short story—one well-known to the pupils is best. Whittington and his Cat would do admirably. Write the chief points of the legend on the blackboard in brief, synoptical form, but in an absurdly illogical order:

"Whittington—a chest of gold—goes to sea—born in London—Mayor—cat given him—dies respected—poor boy, etc., etc."

If now the teacher will begin to tell the story, following the exact order of the synopsis, the class will soon object, and may readily be led to number the items in the order in which they should be stated in telling the story.

A very little practice will enable a class to number the items relating to salt substantially as they are numbered in the synopsis already given. When these are arranged according to the principles of object teaching, they will condense into—

*Salt.*

1. Qualities—3: White; soluble; saline taste.
2. Kinds—3: Rock; bay; table.
3. Uses—3: Seasoning; preserving meat, etc.; soda.
4. Sources—3: Mines; springs; ocean.
5. Associations—2: Hospitality; superstitions.

In making up a final synopsis such as this, great care should be taken not to overload a subject by a multiplicity of details. To accomplish this, only the most important items of the irregular synopsis should be taken. To attempt more is to cause the lesson to break of its own weight. Most of the objects prop-

erly selected as the basis of the lessons of the lower grades may readily be reduced to from seven to ten items. The smaller the number the better.

Now what use is to be made of this synopsis? It is obvious that if the pupil has the synopsis before him on the blackboard and is called upon to state without being questioned what he knows about salt, the synopsis will be to him a brief set of arranged suggestions or notes, and that with a little practice he will be able with its aid to make a "continuous oral statement." But a much more important use can be made of this synopsis.

The next step is to train the class to reproduce it for themselves. This will be found to be of great practical importance, and is indeed indispensable. The memory will now be called into exercise to remember the facts and the brief notes with which they are associated. The judgment will be trained to arrange them in their logical order of sequence. When by many lessons this has been made a mental habit, the influence of the training will be felt upon all the other school lessons, as well as through life. There are several ways of accomplishing this step of reproducing the synopsis. The following is one of the most simple, expeditious and efficient. Skilful teachers will readily devise methods of their own:

*First*—Write the seven to ten or more items upon the blackboard in their proper order. This has already been determined by the pupil. Place its proper number before each item.

*Second*—Tell the pupils to look carefully at the items and try to remember them, and that you will

presently require them to be written in the same way upon the slates and from memory.

*Third*—Cover the synopsis with a newspaper or the convenient screen, and at a given signal let the pupils try to reproduce it upon their slates.

*Fourth*—Call upon one to read what he has written, and let the rest of the class, without looking upon their slates, tell what he has omitted or what error he has made. Then give all a brief opportunity to correct and complete. Have the slates cleaned, and try once or twice more, if necessary, until a reasonably correct result is obtained. Clean the synopsis from the blackboard.

*Fifth*—The final step is obvious. It is that for which all that precedes has been the preparation. Let a sufficient number of pupils be called upon one after another to make a connected oral statement of such facts and ideas as each can properly recall, glancing from time to time, as he may find it necessary, at the synopsis upon his slate.

**Specimen Object Lesson.**

*The Bear—Use Pictures.*

Special points to be developed.

*Parts*—Broad head; strong, clumsy body, covered with long coarse hair; stout thick legs, short tail; large, slightly pointed ears; small, bright eyes; front teeth in both jaws; canine teeth (two in each jaw), long, strong and slightly curved backwards; molars broad and surmounted with tubercles; five toes on each foot, each having a long, stout curved claw or nail, fitted for digging or climbing (not retractile). Sole of foot naked; simple stomach.

*Habits.*

Eats animal and vegetable food; walks on its flat feet (hence called plantigrade); climbs trees, nocturnal; stands readily on hind feet; uses fore feet for defence by striking or hugging.

*Uses.*

Flesh, leather, fur, curiosity.

Dwell on adaptation of parts to habits and uses.

*Miscellaneous and Popular.*

Cunning, unsocial; spends the winter in caves in hollow trees, almost without food; dangerous and formidable; sometimes called Bruin. (Why?)

A few lessons should be given with the use of pictures, upon the lion, tiger, wolf, fox, raccoon. The cat, dog and bear being the *types* of the families to which they respectively belong, the matter furnished above will serve in all essential particulars for classifying the other animals.

Give lessons on likenesses and differences; from the former get the idea and term carnivorous, and from the latter the following:

Carnivorous Animals { Cat family. / Dog " / Bear " / X "

NOTE.—The other families of this order are not given, because to attempt so much would defeat the object of the lessons.

Models for identifying or describing:

*Oral.*

The lion is a wild, ferocious, toe-walking animal that belongs to the cat family of carnivorous animals.

*Written.*

Wild.

Carniverous Animals.

- Digitigrade. Claws retractile. } Cat family.
- Front teeth in both jaws. Canine, long hooked, fitted for tearing. Molars, uneven, sharp, fitted for cutting. Simple stomach. } Carnivorous.

After each animal studied has been identified according to plans given, and a general talk had upon the whole order, a composition should be written upon the subject, Carnivorous Animals.

Several weeks may be spent profitably upon a comparison of Herbivorous and Carnivorous animals.

The following points are suggested:

| | |
|---|---|
| Kinds of teeth. | Kinds of food. |
| Kinds of stomachs. | Nature of food. |
| Shape and comparative size of trunks, especially the abdominal region. | Quantity of food. |
| Acuteness of senses. | Manner of obtaining food. |
| Pliability of osseous structure. | Manner of obtaining food. |

| | | |
|---|---|---|
| Freedom of motion of the limbs. | - | Manner of obtaining food. |
| Kinds of feet. - - | | General habits, manner of obtaining food. |
| Muscular power. (Relative.) Limbs as weapons of offence or defence. | - | Obstacles to be overcome in obtaining food. |
| The animal in each order most remote from the type. (Hog, bear.) | - | Food, (both kinds.) |

The work indicated by this paper will require more time than that of the preceding papers.

**General Formula.**

*I. Directions,*

1. Let the pupils describe the apparatus.
2. Let the pupils perform the experiments.
3. Let the pupils announce the experiments.
4. Use simple objects and illustrations.
5. Proceed by rudimentary facts.
6. Proceed by individual cases to deduce laws.
7. Let the principles be developed by the pupils.
8. Let the pupils perceive that we arrive at results by three different ways: 1st, by *observation;* 2d, by *experiment;* 3d, by *effects.*

*II. Cautions.*

1. Speak slowly.
2. Repeat carefully.

3. Use simple language.
4. Write points on the board.
5. Require pupils to copy.
6. Keep close to the subject.
7. Require pupils to answer in complete statements.
8. Repeat experiments and illustrations.
9. Reproduce each lesson carefully.
10. Never use a term that has not been fully developed.
11. Guide the pupil's thoughts, but do not lead them.
12. Arrange a definite plan.
13. Work so as to secure and hold attention.
14. Let your object be to guide pupils to see clearly and infer correctly.

### General Formula.

*I. Objects should be presented,*

1. To the senses, or perception.
2. To the reflective or reasoning powers.
3. Their features should be thoroughly memorized.

*II. Ideas are developed,*

1. By appealing to the senses.
2. By comparison.
3. By experiment.
4. By reason.

### Lesson on Divisibility.

The teacher should have on the table different articles, as slips of wood, a lump of coal, piece of glass, brick, stone, etc., glass jar containing water, cochineal, carmine, etc.

First, let the pupils describe the articles, as "You hold in your hand a piece of pine wood ten inches in length, two inches in breadth and one-half an inch in thickness." See that they express the truth and use accurate language.

"You hold in your hand a lump of coal about as large as a hen's egg."

"You have in your hand a piece of a brick about four inches in length, four inches in breadth, and two inches in thickness."

"You hold in your hand a glass jar containing one quart of clear water," etc., etc.

The teacher may now place in the hands of the pupil a small slip of wood and tell him to do something with it. The pupil will either break, cut or split it. The teacher will ask him to observe what he has done with it. The pupil will answer, "I have broken it." The teacher will so question the pupils as to draw out an answer similar to the following: "The wood may be separated into parts."

Again, the teacher will request one of the pupils to take the hammer and do something with the coal. The pupil will break it, and he perceives that the coal may be broken into pieces.

The teacher will so question the pupil as to draw out the following answer: "Coal may be separated into parts." So proceed with the brick, glass, stone, iron, etc., and lastly take the glass jar and put in it a few grains of cochineal, carmine or indigo, and let the pupils notice the effects. They will say that the cochineal is coloring the water; let them see that the

cochineal is separated into thousands of parts; lead them to say that cochineal "may be separated into parts." The teacher should write all the facts on the board, and require the pupils to spell the words. See that the children begin every statement with a capital letter and end it with a period.

The lesson thus far developed will appear on the board in the following form:

1. Wood may be separated into parts.
2. Coal may be separated into parts.
3. Glass may be separated into parts.
4. Brick may be separated into parts.
5. Iron may be separated into parts.
6. Cochineal may be separated into parts.

Pupils should be required to copy the above neatly, and reproduce it. They should be lead to perceive that all objects may be separated into parts. At this stage ask them to give a general name to all things that they can perceive. They will give the names: things, objects, articles, substance, matter,—perhaps not the latter; if they do not give the name matter, the teacher should give it. Tell the pupils that "matter" is the term you wish them to use. Now lead them to perceive that that "Matter may be separated into parts." Now tell them that this properly is called by a certain term, *Divisibility*, and lead them to develop the definition from the knowledge already possessed. For example, that property of matter, which allows it to be separated into parts is Divisibility.

The lesson will now appear on the board in the following form :

1. Wood may be separated into parts.
2. Coal may be separated into parts.
3. Glass may be separated into parts.
4. Brick may be separated into parts.
5. Iron may be separated into parts.
6. Cochineal may be separated into parts.
7. Musk may be separated into parts, etc., etc.

*General Law*—All matter may be separated into parts.

*Definition*—Divisibility is that property of matter which allows it to be separated into parts.

The pupils should memorize the General Law and Definition. The teacher may give extended information in relation to divisibility, speaking of a grain of musk, of the small portions it throws off, and of various minerals.

# RECITATIONS.

## INTRODUCTORY.

As it is considered more important to *digest* what is learned than merely to *acquire* it, the manner of conducting a recitation becomes of the highest importance. It is to be expected that the pupils carry away with them the habits of mind that the class-training engenders. The ability of the teacher to make each recitation a model of the best method of investigating a subject and of expressing the results, is the highest recommendation for the position he holds.

Discipline is only a means, whereas the recitation is an end. A failure here is a failure altogether. It has definite and rational aims to be carefully sought after and earnestly pursued. It is the most delicate part of all the school work. Here the teacher may exhibit skill, tact, and individuality; the inventive powers are to be taxed to their utmost, in order to bring about the desired results.

### Main Object of the Recitation.

The *main* object is to develop the powers of the pupils, and this development will be attained in proportion to the ability, capacity, and ingenuity of the teacher.

The conditions of success in school work are as fixed as the axioms of mathematics. Intense interest, activity, self-reliance, well-directed effort—these are the essential features of all efficient methods. Any method of conducting recitations that embraces these is a good one. Different teachers do not always succeed best with the same method.

Adaptation and variety are cardinal principles in education. The safe rule is: *Employ the method which will best enable you to effect the desired results.*

### How to Conduct a Recitation.

I. Essentials.

*1. A brief reproduction of the preceding lesson.*

*2. A brief review of the preceding lesson.*

*3. Rehearsal and critical examination of the daily lesson.*

*4. Recapitulation of the daily lesson.*

*5. Adequate preparation for the advanced lesson.*

II. Objects of the Recitation.

*1. The development of the faculties.*

*2. The acquisition of knowledge.*

*3. Its application to the use of life.*

III. Ends of the Recitations.

*1. To develop individuality.*

*2. To encourage originality.*

*3. To cultivate self-reliance and self-possession.*

*4. To cultivate sentiments of justice, kindness, forbearance and courtesy.*

*5. That the development and the growth of the pupils, physically, intellectually and morally, may be carefully nurtured, and bravely prepare them for life's service.*

*IV. Aims to be Attained in Conducting a Recitation.*

1. To teach "one thing at a time, and that well."
2. To fix and hold the attention.
3. To develop the power of close observation.
4. To cultivate exact, concise, and ready expression.
5. To increase the attainments of the class.
6. To determine the pupils' habits and methods of study, and to correct whatever is faulty either in manner or matter.
7. To ascertain the extent of preparation on the part of the pupil.
8. To encourage the work. This is important to prevent apostasy—"backsliding."
9. To give preliminary drill on subsequent lessons,

showing *what* is to be done and *how* it is to be done. This needs special attention.

10. To hear reports on subjects assigned at previous recitations.

11. To require pupils to answer in full and complete propositions

12. That no pupil should speak till recognized by the teacher—the chairman of the meeting.

13. The pupil should rise when called upon to recite.

14. The teacher is not expected to recite, nor repeat the pupils' answers.

15. That system, neatness and accuracy should characterize all work.

16. That criticism, given in the spirit of kindness, should be indulged at every recitation.

17. That the recitation should cease when there is any confusion in the room.

18. Aim to reach general principles.

19. Remember that in primary work the "how" always precedes the "why."

20. Master subjects rather than pages.

21. Remember that mind-training is more important than mere knowledge.

22. Avoid wandering; keep the object of the lesson before you.

23. Avoid leaning in *slavish dependence* upon the text-book.

24. Use judgment in the assignment of lessons.

25. Propound questions promiscuously.

26. State the question—then call upon the pupil.

27. When the pupil is called upon to recite, permit no interruptions, as speaking without permission, holding up hands, etc.

28. Cultivate honesty in every recitation.

29. Never "show off" pet classes or pet pupils.

30. Do not talk too much about order.

31. Cultivate language in the pupils; let every exercise bear upon the correct use of language.

32. Close recitation promptly.

33. Dismiss the class in order.

34. Be cheerful, active and energetic.

35. Thoroughly master your subjects.

36. "Make haste slowly."

37. Do not yourself remove difficulties, but teach pupils to *overcome*, to *master* them; in all instruction "never remove a difficulty which the pupil has the power to remove."

38. Allow no questions foreign to the recitation to be asked.

39. Allow no hesitation during recitation.

40. Give entire time and attention to the recitation.

41. Require expertness in mechanical operations.

42. Comprehend the difference between memory of words, and knowledge.

43. Comprehend the difference between "hearing a recitation," and teaching.

44. The skilful teacher will always prepare his class for any difficulty which may meet them in the advance lesson. He may explain the difficulty orally; he may solve an example, not in the book, which shall meet the difficulty; he may give the class a pre-

liminary drill on the rule, or on a series of more difficult examples under any rule, or in miscellaneous examples under a number of rules. Such preparation, judiciously given, is calculated to keep up the ambition of *all* the class, by removing all excuses for laziness and discouragement.

45. Remember that true education is the forming for life of correct habits of *thinking*, *feeling* and *doing*.

V. Requisites for the Recitation.

*1. A live, intelligent teacher.*

*2. Recitation seats.*

*3. An abundance of blackboard.*

*4. Apparatus,—such as globes, charts, maps, numerical frame, measures, etc.*

*5. Reference books.*

*6. Call bell.*

*7. Proper ventilation.*

*8. Equal temperature.*

VI. Preparation by the Teacher.

*1. General preparation, always special if possible.*

*2. Should have a knowledge of mental and moral philosophy.*

*3. Should have an abstract of each day's work.*

*4. Should know how to "use" books, but not abuse them.*

**Remarks on "How to Conduct a Recitation."**

*Reproduction.*

No permanent results can be attained in teaching without *thorough*, *careful* and *repeated* reproduction of lessons.

After a lesson has been given and recited by the pupils in the subsequent recitation, they should be required to restate what they learned in the preceding lesson, using good language and distinct and definite propositions. No questions should be asked by the teacher—and if the work has been done as it should be in the preceding exercise, there will be no need of any.

In primary classes, require oral reproduction; in intermediate and senior classes, written reproduction.

**Reviews.**

In the review the teacher asks questions of the pupils, direct and general; pupils are required to construct tabulation on the board, and recite from the tabulations. It is well to let the pupils ask questions of each other—this will inspire the pupils with a desire for study and make them ready, prompt and self-reliant.

The teacher should institute weekly reviews, both oral and written.

**Rehearsal.**

This is perhaps the most delicate part of the recitation. To so conduct it that pupils may pass a

thorough examination requires skill, judgment and experience. The teacher is not expected to render assistance in this division of the recitation; the pupils *must do the work*, and give clear proof of their comprehension of the lesson. If they cannot do it, the teacher is in fault, and not the pupils.

During this part of the recitation, the teacher should not take the time "to recite;" it is the pupils' time. That is a very poor teacher who will do the work that should be done by the pupil.

### Recapitulation.

Before the class is excused, let them give the leading, salient points of the lesson—a summary—a digest of the whole.

### Give Preliminary Drill upon Subsequent Lessons.

A great deal of time is lost in the school, because pupils do not know *what* to do or *how* to do it In all primary classes oral instruction should precede pure recitation. In fact, in all classes, where it is necessary, oral instruction should be given.

I would not be understood to say that the teacher must tell the child all he is to learn; he should use the rational oral method, and not the old, antiquated text-book method.

### Objects of the Recitation.

The main object of an education is to teach a child self-control—physical, intellectual and moral. This can be done only through a harmonious development of all his powers.

They should be so taught in school that they may have a desire to pursue other studies; able to acquire knowledge by observation, investigation and study. The knowledge imparted should be applied, as far as may be, to practice.

### General Remarks.

In recitations, the expression of the thoughts which the pupil has acquired by study, should be embodied in his own language.

If the lesson contains captions, mathematical definitions, principles or tables, or fixed rules, they should be accurately recited in the words of the author. The mind should be the depository of thoughts and not of mere words and signs.

In the class-recitation the pupil should be required to stand erect while reciting. This will give him confidence and self-reliance.

It should not be known beforehand what order will be pursued in conducting the recitation. If called on consecutively, some will be inattentive; if called on promiscuously, the idle and inattentive will be called more frequently.

Every teacher must see to it that each pupil is so classified as to be required to perform a full amount of mental labor. "Each mind must be taxed." It is the wise teacher who is able to adapt his treatment and instruction to the wants of each and all.

Teachers are quite apt to call out the bright, intelligent pupils in the recitation; but let us remember that mere scholarship does not make the man; do not slight those who are dull, slow to understand.

Our calculations may be entirely subverted; in active life he wins who is more industrious and laborious than his fellow-men.

**Honor those who Labor.**

It is not the one who bears away the highest honors in the colleges, as a rule, that attains to the highest positions in life. The world has reversed the decision, and awarded the merit and honor to him who has paved his way to distinction and usefulness by toil and sweat and tears.

Such are Nathaniel Bowditch, the mathematician; Benjamin Franklin, the philosopher; George Peabody, the philanthropist; Abraham Lincoln, the statesman, and Ulysses S. Grant, the general.

I would not intimate that scholarly ability is not desirable, but this is not always the test. Long and merited toil is the price of merited honor. He who has gained the highest marks of professional life has risen step by step, not by *genius*, but by *labor*.

**Make the Recitation Interesting.**

Another practical suggestion in this connection is: strive to make the recitation attractive and interesting. This requires thought and professional skill. The teacher should carefully study each lesson before meeting the class, not merely to enable him to understand what he teaches, but to be able to so conduct the recitation that he will awaken and keep alive the interest of his pupils. The grand test of the teacher's ability, and the secret of his success is found in his power to inspire his pupils with earnestness and enthusiasm. To *wake up mind*, is his first and most important duty. A true teacher is alive and in

earnest; his heart throbs with tenderness and emotion; his blood flows freely through his veins, and imparts cheerfulness and vigor to his whole being. Enthusiasm speaks out in his voice, glows in his countenance and flashes from his eye. We need in active service more of these *live* teachers; teachers that can bring order out of confusion, light out of darkness, and awaken to activity the slumbering powers of the intellect.

**Our Country Needs Teachers.**

The country needs "teachers and schools," not "keepers of schools." The country needs men and women "to conduct rational recitations," not to hear classes. The country needs masters, and mastery is attained only through voluntary and persistent labor. Michael Angelo says: "Trifles make perfection, but perfection is no trifle." The teacher should be watchful, faithful and prayerful. Then, and not until then, will he attain success in teaching.

**Recitation.**

*Methods in Teaching.*

- I. *Text-book,*
  - 1. *Rote, memoriter.*
  - 2. *Rational.*
- II. *Oral,*
  - 1. *Rote.*
  - 2. *Rational.*
- III. *Socratic.*
- IV. *Topic or Subject,*
- V. *Discussion,*
- VI. *Lecture.*

The above methods are used in the schools, and many other ways not entitled to the name of method.

The text book method is purely English, and by some it is a "much abused" method.

When teachers simply require the pupils to commit a lesson to memory and recite it mechanically, this is an abuse of the method. The subject is one of unusual interest at the present time, for the reason that so much is said and written for and against the so-called "oral" and "text-book" methods, respectively. While on the one hand the text book method is stigmatized as a dead mechanical memorizing of the words in the book and then a parrot-like repetition of the same to the teacher, who sits behind the desk and looks on the book to see that the lesson is given verbatim, on the other hand the oral system is acused of relieving the pupils from the necessity of study; of throwing all the work upon the teacher.

### Untrained Teachers.

No doubt there are legions of unskilful, untrained or negligent teachers in the country. I am inclined to think that they far outnumber the skilful and pains-taking ones—and it is hardly fair to judge of the methods, when they misuse the position and the instruments placed in their hands so far as to make the text-book a procrustean bed and the recitation a benumbing process to the faculties of the child. The mere memorizing of the context is no index to the understanding of it. A school-mistress once said to a little girl: "How is it, my dear, that you do not understand this simple thing?" "I do not know,

indeed," she answered with a perplexed look; "but I sometimes think I have so many things to learn that I have no time to understand."

It is not best to condemn a method that has been in use for hundreds of years, because *all* cannot attain good results. But systems should not have their merits adjudged by their results in the hands of bunglers; they should be compared in their results as achieved at the hands of those who have *mastered* the methods. A system is not responsible for the failures of those who do not follow out its principles.

Grand results have been attained with the text-book method, by adopting the rational method of recitation,—appealing to reason, to a *proper understanding of the context before memorizing*. The latter is preferred by all rational teachers.

### Oral Method.

The method is purely German, and like the text-book method has its friends and foes. In some schools the teachers lecture before the children, and require them to reproduce the exact language of the lecture. In this case it is as much a rote or memoriter exercise as the text-book method.

In other schools, the teachers ask suggestive questions,—they excite the pupils' curiosity, awaken the mind and easily hold the attention. The pupils do the work, and infer the answers through their powers of perception. This is real education. This is the rational oral method.

The advantage of class-recitation may be found in both oral and text-book methods, chiefly, I think, in

the latter. We believe in a combination of the two methods. We, in America, can neither use the text-book method, which in English, nor the oral method, which is German. We need to Americanize them, and our best teachers, already, are in the advance and working out grand results.

**Oral and Text-Book Methods Compared.**

The American method is the philosophical combination of both,—uniting the merits and rejecting the faults. Oral methods predominate properly in American primary schools; text-book methods in secondary schools and colleges; and we return again to oral methods, or lectures, in the professional schools. The true place for oral methods is in preparatory work. Oral instruction should lead to and prepare for the text-book.

The best work in American schools is found in a judicious combination of both methods. Oral instruction alone, if carried through a course of instruction, even if teachers are prepared to give it, is not the best method. It should lead to a mastery of other thoughts than those on the printed page. The most effective teaching uses both the oral and text-book methods. If used properly, oral teaching will teach the pupils how to investigate. Oral instruction, in its results, is of the highest importance to American citizenship. Young children have few ideas, for they have heard little, read little, and their observation has not been developed.

Oral instruction takes a more permanent hold of the mind than memorizing from books. It affords

the learner an opportunity to ask questions as the lesson proceeds, and gives the teacher the entire control of the youthful minds that lie fallow before him. It opens also a field for enthusiasm in teaching and learning, where everything with some teachers is mere drudgery. It would give life where there is nothing now but worn and worthless machinery in our public schools.

Children are too often made to commit to memory names and dates and rules, without a proper understanding of them. The text-book becomes the real instructor, and not the *living* man or woman who should impart instruction.

We would not discard the text-books entirely, neither would we exclude them.

The proper place for oral instruction is in the primary department; and in other classes the oral instruction should be of such a character as to simply *prepare the pupils for study*, so that no time may be wasted.

Pupils should be made to study their text-books; learn short lessons; be asked by the teachers not only the questions in the books, but others that will test their knowledge and awaken their interest.

Some pupils learn readily from their text-books, and get along with a little explanation. Some are more dull and need the stimulus of recitation, of questions and answers, and of illustrations.

### The Socratic Method.

By skilful questioning the pupil is led to discover the truth, and trained to think. Subjects are devel

oped from the standpoint of the learner. The teacher stimulates and directs, but never crams. Pupils are encouraged to present their own thoughts. If correct, the teacher deepens and widens these views by suggestive illustrations. If incorrect, the absurdity is shown by leading the pupils to discover the legitimate consequences. Thus the burden of thought and research is thrown upon the learner, who, at every step, feels the joy of discovery and victory, and the conscious pleasure of assisting the teacher. Such teaching results in *development*, *growth* and *education*. "The exercise of the child's own powers, stimulated and directed, but not superseded, by the teacher's interference, ends both in the acquisition of knowledge and in the invigoration of the powers for future acquisition."

This old, old method is slowly but irresistably tending to become universal. Mere school *keepers*, rote teachers, quacks, shams and fossils will never adopt this plan of teaching; but as teachers become familiar with the science of teaching, they will necessarily use the Socratic method of giving instruction. It is the natural method.

### The Topical Method.

In this method the pupils are trained to tell consecutively their own thoughts.

The art of connected discourse is essential; hence by our best teachers the topical method is made the *basis* of the recitation. This should be required of every class in school, whenever the subject will admit of it. No other method can so easily secure

the results to be accomplished. Pointed, searching questions are asked whenever necessary, and instruction is given in the Socratic method. At any moment any member of the class is liable to be called on to explain a difficulty, to answer a question, or to continue the topic. Thus life, vigor, undivided attention, and effective individual effort are secured and maintained throughout the recitation.

Prompting, in all its forms, is inartistic and pernicious. The aim is to train the pupils to habits of *independent expression*, as well as independent thought. The exclusive use of the topic method is an extreme to be studiously avoided, as it excludes instruction and fails to elicit the intense interest and the earnest effort of every member of the class. It should have a limited use in the primary department, more extended in the intermediate and senior departments. In the primary classes, the terms may be developed individually, and written on the board; thus forming a complete tabulation and classification.

The pupils should be required to review the terms written on the board, without any assistance from the teacher.

In intermediate and senior classes, the pupils should be taught to tabulate and classify, and recite from the tabulation.

**The Discussion Method.**

Briefly and pointedly pupils present their arguments in favor of their respective positions. Criticisms are urged and answered. Every point is sharply contested. The reasons for and against are carefully weighed.

Educationally the discussion method stands high. It is like the interest excited in debate; in these mental conflicts, the utmost power of the pupil is put forth.

There is no better way to cultivate independence, self-assertion, liberality, and the habit of treating an opponent courteously and fairly. The discussion method supplements the Socratic and topic methods. It breaks up monotony, dissipates stupidness and insipidity.

From the primary school to the university this method may be used to incalculable advantage; but in all cases it must be kept well under the control and direction of the teacher.

Perhaps there is no method that will excite greater interest than this rational method. There is less examining, less artificial training and more solid development. The discussion method is pre-eminently the method to make *thinking men* and *thinking women*.

### The Lecture Method.

Lecturing is another method of instruction which has its uses and abuses. A lecture by the teacher should never be substituted for a recitation by the class. Many teachers suppose that the measure of their ability as instructors is the power they have to explain and illustrate before their classes; and hence spend the most of the time assigned to recitation in the display of their own gifts of speech. But in the recitation room the *good* teacher has but little to say. His ability is tested more by his silence than by

his loquacity; by his power to arouse and direct the activity of his pupils, more than by his own actions. In professional schools and in the advanced classes in colleges, the time for recitation is largely spent in this way. The lecturer outlines the subject, suggests the fields of research, indicates the line of thought, gives much information and stimulates the pupils to effort. It the student, by long continued effort makes the lecture his own, great will be the results.

But nowhere in this country has the lecture method alone given entire satisfaction. It has been found necessary to institute oral and written examinations in order to make it effective.

The conversational lecture gives results. The class by skilful questions are led into rich fields of thought. Topics are discussed by the teacher and the pupils. Questions are asked that produce thought; experiments are performod that elicit attention; pupils are led to draw inferences from what they perceive. This method was admirably used by the wise Socrates, Plato and Aristotle. From these great masters modern teachers may learn important lessons.

The lecture method is utterly out of place in the primary classes. Wherever it has been used it proves a failure.

Whenever a teacher gives a lecture to his pupils, he should require them to take notes, and recite after every formal lecture. It is well for the teacher to write on the board a tabulated classification, and require the pupils to copy.

### General Remarks.

Whatever method the teacher may follow, ONE end should be attained; the best possible development of *true manhood and womanhood.* The inquiry may rise, what is the end of study, recitation and instruction?

Not the attainment of knowledge, but *discipline*—POWER. It is undoubtedly a fact that "secular education will make a *good* man better, but a *bad* man worse."

Education, then, is not the storing of knowledge, but the development of power; and the law of development is thorough exercise.

Any system of education, therefore, which weakens the motive, or removes the necessity of *laborious thinking* is *false* in theory and *ruinous* in practice.

There is only one way to acquire knowledge, and that way is through study—the *voluntary* and *continual* application of the mind to a subject.

### Laws of Questioning.

1. Questions should be clear and concise.
2. Questions should be to the point.
3. Questions should be adapted to the capacity.
4. Questions should be logical.
5. Questions should not be ambiguous.
6. Avoid questions that give a choice between two answers.
7. Avoid direct questions.
8. Avoid set questions.
9. Avoid general questions.

10. Avoid questions that simply exercise the faculty of memory.

### Object of Questions.

1. To find out what the pupils know.
2. To ascertain what they need to know.
3. To awaken curiosity.
4. To arouse the mind to action.
5. To illustrate; to explain,—when necessary.
6. To impart knowledge not found in the text-book.
7. To fix knowledge in the mind.
8. To secure thoroughness.

### Cautions to be Observed in Questioning.

1. Ask questions only once.
2. Vary the questions.
3. Begin the exercise with an easy question.
4. Let your questions be connected.
5. When a question is asked, do not suggest the first words of the answer.
6. Enunciate every question with distinctness.
7. Anticipate answers; arrange suggestive questions.
8. Never neglect or ridicule an answer.
9. "Never tell a child what you could make that child tell you."
10. Question the lesson *into* the minds of the pupils, and question it *out* again.
11. Lead the pupil by a pleasant question to discover his own mistake, instead of directly charging him with it.

**Maxims, or First Principles.**

*I.* "*The idea should go before the word which expresses it—or, in other words, a clear and distinct conception of an object should be impressed upon the mind, before the name or term which expresses it be committed to memory.*"

*II.* "*In the process of instruction, nothing* (*if possible*) *should be assigned to the young merely as a task.*"

*III.* "*Everything that is cheerful and exhilarating to the young should be associated with the business of edncation.*"

*IV.* "*In the practice of teaching, the principle of emulation should be discarded.*"

*V.* "*Corporal punishment should be seldom or never inflicted—and when it is determined upon as the last resort, it should be inflicted with calmness and affection.*"

*VI.* "*Children should not be long confined in school—and never any longer than they are actually employed in it.*"

*VII.* "*Young people should always be treated as rational creatures, and their opinion occasionally solicited as to certain points and scholastic arrangements.*"

*VIII.* "*Reproof should always be tendered with the utmost confidence and mildness.*"

*IX. "One great object of education should be to fix the attention on the subjects we wish to explain and elucidate."*

**Remarks.**

A principle of teaching is a law based upon the condition of the minds of those to be taught.

Very meagre will be the results of those teachers who instruct regardless of principles. There may be apparent advancement, but there will be no real progress.

If the first principle were uniformly introduced into education it would overturn almost every system of instruction which has hitherto prevailed. We may ask in the name of all that is wise, what is gained if we stock and overburden the memories of children with a medley of words to which no correct ideas are attached? A child may repeat hundreds of verses and yet be entirely ignorant of the meaning of almost every proposition. In the original formation of language, the objects of nature must first have been observed and known, before words or signs were fixed upon to distinguish them; the children should be made to feel a desire for terms to express their ideas; and, in this case, the ideas and the words which express them will afterwards be inseparably connected.

Pains should be taken to carry out the intent of the second principle. The teacher cannot be too careful not to disgust at the first process of learning. Frequently revengeful feelings are excited by re-

quiring children to remain after school hours, and commit lines of poetry to memory, or perform some menial duty.

Teachers are sometimes at fault for unlearned lessons on the part of pupils, because they have not told the children *what* to do or *how* to do it. If the young understand the nature and objects of their work, and the manner in which it should be prosecuted, they will find a pleasure in endeavoring to surmount every apparent difficulty. The work should be represented both as a *duty* and a *pleasure.*

It will give pleasure both to teacher and pupils to practise the import of the third principle.

A smile from the teacher lightens the labor of the school, and lessens the burdens of the day.

School-rooms should be spacious, light and airy,—well ventilated, comfortably heated during winter and erected in delightful and commanding situations. The walls should be adorned with pictures, mottoes, vines and ornaments.

The school-room should be made as homelike as possible, as inviting as public halls. Teachers should frequently exhibit amusing and instructive experiments, and ask the children to assist them. The children should be gratified occasionally with excursions into interesting parts of the country, to view the works of nature and thus increase their love of the beautiful. Everything should be so conducted that all their scholastic exercises may be connected with delightful associations.

In the practice of the fourth principle, we believe

that the principle of emulation should be discarded. Many teachers have asserted that they could not conduct education without the aid of this principle. We believe that commedation for improvement needs to be practised much more frequently than reproof for deficiency.

It is better to cultivate a love of knowledge for its own sake, that is for the pleasure it imparts and also for the sake of the increased good it will enable us to do for ourselves and for our fellow-beings.

By appeals to parental authority and influence; by efforts to form correct public sentiment in schools, so that it shall be unpopular to do wrong; by cultivating in the pupils a sense of obligation to God, of his constant inspection, and of his interest in all their concerns, the children may be stimulated to do right.

We believe that to encourage pupils to do right is the safest way; not always the easiest, but the best.

In an intellectual point of view emulation may be satisfactory to the few that excel; satisfactory to parents and guardians, who are led to form false estimates of their progress and acquirements by the places they occupy in their respective classes; but it almost uniformly produces an injurious effect on the moral temperament of the young and on their companions whom they excel.

One grand end of instruction, which has been too much overlooked, is to cultivate and regulate the moral powers,—to produce love, affection, concord, humility, self-denial and other moral graces. But the principle of emulation has a tendency to produce

jealousy, envy, hatred and other malignant passions. Besides it is only a very few in every class that can be stimulated to exertion by this principle, and these few are generally of such a temperament as to require their ambitious disposition to be restrained, rather than excited. A material prize is the *least* effectual mode of accomplishing the desired object; it is founded on injustice, inasmuch as it heaps honors and emoluments on those to whom nature has already been most bountiful.

In the curiosity of children, there is sufficient and natural stimulant of the appetite for knowledge, and we live in a world abounding in the means of useful and pleasurable gratifications.

All that is required of teachers is to aid the faculties with affection and judgment. A certificate of diligence and good conduct seems to be all that is necessary to distinguish from the vicious, the idle, the slothful, those who have employed their time and talents in a proper manner.

In the fifth principle, which says: "Corporal punishment should be seldom or never inflicted," etc., is one of the unsolved problems of the day. Whether we have a healthier form of discipline in our American families and schools, can only be answered correctly by the wise fathers and mothers who have passed their four score years. We can but believe that corporal punishment, as it is generally administered, is something revolting and degrading in its character, and the necessity of resorting to it generally indicates that there has been a want of proper

training in the earlier stages of life. It is vain to imagine that children can be *whipped* into either learning or religion; and if an enlightened and judicious mode of tuition were universally adopted there would seldom be any necessity for resorting to such a stimulus But in the modes of teaching which now generally prevail, corporal punishment is almost inevitable.

Corporal punishment, rudeness, ridicule and reproach are altogether incompatible with a system of moral and intellectual instruction which is calculated to allure the minds of the young.

Corporal punishment has generally a hardening effect on the minds both of young and old.

A blacksmith brought up his son, to whom he was very severe, to his own trade. The urchin was nevertheless an audacious dog. One day the old vulcan was attempting to harden a cold chisel which he had made of foreign steel, but could not succeed. "Horse-whip it, father," exclaimed the youth, "if that will not *harden* it, nothing will."

Little need be said on the sixth principle; but all will agree that a school ought never to serve the purposes of a prison. If the primary classes are incapable of preparing the lessons themselves, they should be provided with slates and pencils and taught how to draw, to write and make figures. In mild weather they should have frequent recesses, and be called in when their lessons are to be explained.

The seventh principle, if fully practised, will aid materially in school government. The reasons for

the treatment they receive, and for the exercises prescribed, in so far as they are able to appreciate them, should be stated occasionally, and explained and illustrated.

The eighth principle is one of the most important ones. Plato said, "a teacher should never punish in anger." When reproofs are uttered in passion, and with looks of fury, they seldom or never produce any good effect, and not unfrequently excite a spirit of revenge against the reprover.

The ninth and last principle should be put in practice by teachers. But few seem to do it.

The habit of attending to what one reads and what one hears is a most important habit.

In order to fix the attention, we must "continually think about it," study the subject, and get the powers under control. Pupils should be taught to *investigate*, to *study*, to *think*, to *notice* every object within the reach of their vision, and to give an account of what they have seen or heard.

All of these circumstances have a tendency to induce a habit of attention, without which there can be no solid improvement in any department of instruction. The teacher should not proceed with the exercises of the school without the undivided attention of every pupil. It is the imperative duty of the pupils to attend, provided the teacher is capable of instructing them.

### Laws of Teaching.

1. Know thoroughly and familiarly whatever you attempt to teach.

2. Gain and keep the attention of your pupils, and excite their interest in the subject.

3. Use language which your pupils fully understand, and clearly explain every new word required.

4. Begin with what is already known, and proceed to the unknown by easy and natural steps.

5. Excite the self-activity of the pupils, and lead them to discover the truth for themselves.

6. Require pupils to re-state fully and correctly in their own language, and with their own illustrations, the truth taught them.

7. Review, review, review,—carefully, thoroughly and repeatedly.

NOTE.—These laws underlie and control all successful teaching. Nothing need be added to them; nothing can be safely taken away.

### Principles of Teaching.

1. "Teach objects before names."
2. "Teach ideas before words."
3. "Teach thoughts before sentences."
4. "Knowledge before definitions."
5. "Proceed from the known to the unknown."
6. "Proceed from the concret to the abstract."
7. "Proceed from the simple to the complex."
8. "Proceed from the particular to the general."
9. "Proceed from rudiments to principles."

### Suggestions to Teachers.

1. Show the necessity of a subject before you begin to teach it.

2. Require one subject to be understood, before taking up another.

3. Require everything that is taught, to be reproduced by the pupils.

4. Always take up subjects in their logical order.

5. That which is attempted should be thoroughly mastered.

6. Remember that all the powers are developed by being judiciously and vigorously exercised.

7. Remember that knowledge is of little value unless it can be utilized.

8. Remember that a lesson is not given until it has been received.

### Suggestions to Young Teachers.

1. Make weekly or bi-weekly inspections of all books held by the pupils, holding each responsible for the right use of the same. This will prevent much mutilation and destruction of books.

2. In the class-room, teachers should not confine the attention of the pupils exclusively to what is found in the books. "Books are but helps," or instruments; and while that which is contained in them should be judiciously used and thoroughly understood, yet, so far as time will permit, the teacher can, to advantage, introduce such matters as are not only valuable in themselves, but such as will tend to impress the subject of the lesson more firmly upon the mind.

3. Be judicious and sparing in awarding credit or discredit marks; to be lavish, would render them cheap and comparatively valueless.

4. Before reproving delinquents in recitation, first inquire whether or not they have studied, and, if so,

what effort has been made. Some pupils may devote much time and labor to the acquirement of their lessons, and yet in the class-room be weak in recitation; and to denounce such would tend to discourage rather than stimulate.

5. During a recitation, the attention of *all* should be engaged upon the lesson or subject under consideration

6. When a pupil applies for assistance in any question, do not accomplish the whole yourself, neither send him away entirely unaided; but after he has studied the subject faithfully, present to him one or two of the leading principles involved, and then leave him to develop the matter himself. *Too much aid is sometimes worse than too little.*

7. Teachers should, before entering on their duties for the day, be thoroughly conversant with the subject of each lesson. A teacher, while conducting a recitation, *should never be obliged to refer to the book or map* for the purpose of ascertaining whether or not the pupil is correct in his answer. Besides displaying a weakness on the part of the teacher, there arises in the mind of the pupil the query—why should I study what my teacher does not know?

The teacher should be first well acquainted with the true answer to every question, and the correct pronunciation of every word in the several lessons. It will be seen that many advantages attend this plan; the chief ot which are—much time is saved, the teacher instructs with more facility and success, and the pupil, observing the familiarity of the teacher

with the several subjects, feels for him a greater respect

8. In hearing a lesson give the pupil time to answer when it appears he has a correct idea, and merely hesitates to find words to express himself; but when it is evident that he is ignorant of the answer, waiting is bnt a loss of time.

9. Be sure the pupils have gained IDEAS. Words, without ideas, clog the mind.

10. A teacher taking charge of a new class, should at first advance it beyond the farthest point it had previously attained in each study. In case the teacher finds the new class deficient in what has been passed over, he should not turn back until about two weeks have elapsed, when all necessary reviews may be made. When a class passes under the control of another teacher, a sudden retrograde movement would produce discontent in the class. At the same time, the teacher should avoid allusion tending to disparage the course of his predecessor in the estimation of the class.

11. The hearing of lessons should not occupy more than one hour and a half daily; the remainder of the day being devoted to ACTUAL TEACHING, when the lessons for the following day may be explained by the teacher. In Grammar Schools, answering in CONCERT should be abolished.

12. Whenever practicable, teach by means of objects, or through the medium of the eye; in Geography, use globes and maps; in Astronomy, use orrery, globes and diagrams; in Spelling, frequently

require the pupils to write the words or sentences given.

13. If you would have no drones in your school, talk at each recitation to the dullest in your class, and use all your ingenuity in endeavoring to make him comprehend. The others, then, will be sure to understand.

14. Make each exercise as attractive as possible. Think out your methods beforehand, and illustrate freely.

15. Cultivate self-control ; never be led into confusion, and above all be in earnest.

16. Be cheerful and smile often. A teacher with a long face casts a gloom over everything, and eventually chills young minds and closes young hearts.

17. Use simple language when you explain lessons. Long words are thrown away in the school-room.

18. Thoroughly test each pupil on the lesson, and do not be afraid of repetition. Review every day, or much will be lost.

19. Do not try to teach too much ; better teach a little and teach it well.

20. Endeavor to make your pupils understand the meaning of what they study. Probe the matter to the bottom, and get at the real knowledge of your scholars.

21. Cultivate the understanding, and do not appeal directly to the memory.

22. Lay the foundation of knowledge firmly and well.

23. Impart right principles and lead your pupils

to a higher level, to a nobler range of thought. Endeavor to accomplish all that skill, intelligence and love can suggest.

What now you do, you know not,
But shall hereafter know,
When the seed which you are sowing,
To a whitened field shall grow.

'Tis a rich young soil you're tilling,
Then scatter the good seeds well;
Of the wealth of the golden harvest
Eternity will tell.

24. Teach your pupils to fight manfully in the warfare of good against evil, truth against error; and above all, let the eternal principles of right and wrong govern your own life, and form a part of your own character. If you do this, you will "sow beside all waters, and eventually bring home your sheaves rejoicing."

**Principles of Teaching.**

1. Teach and train the eye to perceive correctly.
2. Teach and train the ear to understand correctly.
3. Teach and train the hand to execute correctly.
4. Teach and train the tongue to speak correctly.
5. Teach and train the pupils to reproduce correctly.
6. "Begin at the beginning."
7. "Follow a natural order."
8. "Classify knowledge."
9. "Master principles."

# DISCIPLINARY EXERCISES.

## INTRODUCTION.

An experience of several years enables the author to assert that disciplinary and calisthenic exercises are best for maintaining the discipline of schools; they invigorate the body, improve the carriage and impart habits of punctuality, quickness, courtesy and obedience.

The pupils almost invariably delight in them; the exercises of the drill give them physical vigor and alacrity; they learn insensibly and in a pleasurable way the need of *instant* and *cheerful* obedience. In this chapter we intend to explain the manner of conducting such exercises.

We shall use the plainest and simplest terms, with less reference to the taste of the critic than to the convenience and profit of the pupil.

A large proportion of our teachers are young and inexperienced. They are earnest and energetic; they are desirous of learning how to accomplish their duties fully and pleasantly; and they are thankful for any instruction in means and method. These exercises are offered as suitable to be *joined to labor*, or *thrown around it in disguise.* It is hoped that the

instruction here given will be sufficiently plain to enable every teacher to put it into practice.

Much depends upon presenting the subject properly to the pupils. It will not do to force the matter upon them, nor even let it seem too much your own plan. Start it quietly, and tell them the use of the exercise, and they will urge you to drill them. The exercise is one in which all may take part, and they will soon be convinced of the merits of the plan.

In preparation for your first, and for every drill, you must have thoroughly studied and practised every movement which you are to teach.

In demeanor be energetic, prompt and decided; use no waste words, and err, if at all, on the side of severity, rather than of familiarity.

**Directions.**

*Disciplinary Commands.*

A. The Word of Caution. B. The Word of Execution.

I. Pupils....Form the Line!
1. Side by side,
2. Face Front,
3. Not too close,
4. Form on the right,
5. Head to the right,
6. Arms by the side,
7. Fingers extended,
7. No talking &c.

II. Pupils.....Attention!
1. Face to the Front,
2. Chin close to neck
3. Chest thrown forward,
4. Heels together,
5. Eyes to the Front,
6. Body erect.

III. Head Movement. { Eyes.....Right.—Front. Eyes.....Left.—Front.

IV. Body Movement. { 1. Right.....Face, 2. Left.....Face, 3. About.....Face.

V. Marching Movements, { 1. Mark time....March, 2. Forward.....March, 3. File right.....March, 4. File left.....March.

VI. Halt.

Cautions 1. Require perfect silence,
2. Do not talk too much,
3. After giving a command, wait until it is executed.
4. Explain each new position, before execution.
5. Take up one movement at a time,
6. Keep exact step,
7. Keep steady time,
8. Persevere.

*Pupils, form the Line!*

The command, "Pupils, form the Line!" I will explain: It means, make a line, side by side, facing one way; not too close to each other; without crowding; as you come up, do not crowd in at the centre of the line, but seek a place at the left; (allow no talking, laughing, or even smiling.) Let your arms hang naturally at your sides, the fingers extended, palms of the hands turned in and the elbows touching each other lightly. Turn your head to the

right, (not your shoulders,) and look along the line to see if you are not too far forward or behind. If forward, fall back ; if behind, come forward.

The teacher should take pains with each one to see that he now obeys the directions in every one of these particulars. Give praise and encouragement when deserved.

*Pupils, Attention!*

At this command, you will think over every particular : the position of the head, eyes, chest, arms and feet. You will remain in a perfect and quiet position until another command is given to you—"*Dismissed!*"

*Eyes, Right!*

The word of caution is, "eyes." You are warned by that word that something is to be done with eyes. You are to do nothing until you have the word of execution, which is, "Right." As soon as you hear that, you are to remain in this position until you hear the command, "Front!" when you are to resume the first position, Now, we will give you a trial—"Eyes—Right!" "Eyes—Left!"

Let there be a careful drill and a review of all the commands. Never forget that "Front" must follow each command.

*Right, Face!*

This movement is performed by throwing the weight of the body on the left foot, making the heel of that foot the pivot on which the body turns, the right foot being raised very slightly and brought around while turning to the right position. In turning, be careful

not to sway the body or bend the knees. Do not move with a jerk.

*About, Face!*

At the word "about," the position of the "rest" is assumed with the feet; at the word "face," turn on the left heel completely around, bringing the right foot to the side of the left; to make the movement *tell*, so that the executions of the order may be simultaneous, it will be well to require a stamp of the right foot as it is brought back, at the word "about." Do not go on to order "face" until "about" is well learned. This is a difficult motion. Be patient; spend much time on it.

The "left, face!" is done in the same way, except that the head is turned to the left.

It would be well to arrange the pupils according to height, as this will add to their appearance. The "facings" are rather difficult, yet very important movements.

**Marching Movement.**

*Mark Time, March!*

At the word of caution, the weight of the body rests upon the right foot; the left foot is held ready to take a step. At the word "March," the left foot is thrown forward, as if to advance, and brought back to place: the right foot follows in the same way.

There is no advancing, and care must be taken to bring the feet back into their tracks, or the line will be broken.

*Forward, March!*

While marking time, give "forward, march,"

taking care to pronounce the word "march" as the right foot strikes the floor.

Marching, either from marking time or from a halt, must be by "the left foot first."

*Halt!*

The command, "halt," stops them. The word "halt" must always be given just as either foot strikes the ground.

*Rest!*

"Rest" is performed by bringing the hands together, the left crossed over the right; arms at full length; left foot brought at right angles with the line; right foot thrown back, the bottom three inches in the rear of the heel of the left foot and parallel with the line; weight of the body on the right foot.

If any one find himself getting behind, he must take longer steps. "Lengthen the pace but never lose the time." While marching by file, if you wish to turn to the right or left, command, "File—Right!" or "File—Left!"

This order is obeyed by the file-leader, and the rest follow him. The pupils must remember to preserve while marching the exact fronting distance, sixteen inches.

In marching, watch every movement and see that the pupils are in perfect order. When the command "Halt!" is given, require the pupils to stop instantly.

*Proper Space.*

In marching, let there be a space of about sixteen inches between the pupils. Insist that the body shall

not be allowed to sway about while marking time; that the head shall be kept erect; that the eyes be directed to the front, striking the floor or ground twelve paces off; and that the arms and hands be held correctly.

*One Movement at a Time.*

Teach one movement a day, and in a few days your pupils will be familiar with all the movements. They should be drilled upon these movements before taking up Calisthenics. The discipline of the school will be very much easier if the teacher will introduce a system; two or three minutes practice each day will insure success, and add to the happiness of the pupils.

**Calisthenics.**

A systematic drill of a few minutes each day will relieve the monotony of school-room routine.

Children in the primary classes become very weary; "activity is a law of childhood—inactivity is the symbol of death, if not death itself." The pupils will take interest in the exercise and beneficial results will be attained. It will improve the pupils in their walk, giving a lighter step, producing grace and symmetry in all their movements. It will give vigor, and tone up pupils to increased effort in study.

- CALISTHENICS.
  - I. Exercise.
    - a. Chest,
    - b. Arm-pit,
    - c. Shoulder,
    - d. Elbow,
    - e. Arm,
    - f. Head,
    - g. Head and Neck,
    - h. Stepping,
    - i. Slapping,
    - j. Chopping,
    - k. Mowing,
    - l. Sawing,
    - m. Trunk.
  - II. Movements.
    - a. Direction.
      - 1. Front,
      - 2. Extended,
      - 2. Oblique,
      - 4. Back Oblique.
      - } Descending.
      - } Horizontal.
      - } Ascending.
    - b. Order.
      - 1. Single.
        - 1. Right,
        - 2. Left,
        - 3. Alternate.
      - 2. Double Simultaneous.

### I. Chest Exercise.

*Command—Chest Exercise—Position—Play!*

*Command.*—At the word of command the pupils should, in this and in the following exercises, take the positions promptly, with decision, and in perfect time.

*Position.*—Stand erect, with heels together, and on the same line ; toes turned equally out, and forming with each other an angle of 60° ; knees straight, without stiffness ; shoulders square and falling equally ; arms hanging naturally by the side, with elbows near the body ; hands firmly closed ; head well set, and eyes directly to the front.

1st Movement.
1. Right hand on chest.
2. Left hand on chest.
3. Right arm extended horizontally in front, four times.
4. Left arm extended horizontally in front, four times.
5. Alternate ; right arm, return ; left arm, return ; two times.

Simultaneous, both arms, four times.

2. Movement.
1. Right hand on chest.
2. Left hand on chest.
3. Right arm perpendicularly downward, four times.
4. Left arm perpendicularly downward, four times.
5. Alternate.
6. Simultaneous.

3d Movement.
1. Right hand on chest.
2. Left hand on chest.
3. Right arm extended horizontally to the right, four times.
4 Left arm extended horizontally to the left, four times.
5. Alternate.
6. Simultaneous.

## II. Arm-pit Exercise.

*Command—Arm-pit Exercise—Position—Play!*

1st Movement.
1. Right hand at arm-pit.
2. Left hand at arm-pit.
3. Right arm perpendicularly downward, four times.
4 Left arm perpendicularly downward, four times.
5. Alternate.
6. Simultaneous.

2d Movement.
1. Hands in the same position as before.
2. Right arm, four times.
3. Left arm, four times.
4. Alternate.
5. Simultaneous.

3d Movement.
1. Hands in the same position as before.
2. Right arm parpendicularly upward, four times.
3. Left arm perpendicularly upward, four times.
4. Alternate.
5. Simultaneous.

### III. Shoulder Exercise.

*Command—Shoulder Exercise—Position—Play!*

1st Movement
1. Raise the right shoulder, 4 times.
2. Raise the left shoulder, 4 times
3. Alternate.
4. Simultaneous.

2d Movement.
1. Right shoulder, forward, once.
2. Right shoulder, upward, once.
3. Right shoulder, backward, once.
4. Right shoulder, downward, once.
5. Repeat, two times.
6. Left shoulder, forward, once.
7. Left shoulder, upward, once.
8. Left shoulder, backward, once.
9. Left shoulder, downward, once.
10. Repeat, two times.
11. Alternate.
12. Simultaneous.

### IV. Elbow Exercise.

*Command—Elbow Exercise—Position—Play!*

1st Movement.
1. Hands on hips, fingers front.
2. Throw the right elbow back, four times.
3. Throw the left elbow back, four times.
4. Alternate.
5. Simultaneous.

2d Movement.
1. Right elbow, forward, once.
2. Right elbow, backward, once.
3. Repeat, three times
4. Left elbow, forward, once.
5. Left elbow, backward, once.
6. Repeat, three times.
7. Alternate, four times.
8. Simultaneous, four times.

### V. Arm Exercise.

*Command—Arm Exercise—Position—Play!*

1st Movement.
1. Hands together, in front.
2. Left hand, retain position.
3. Right hand thrown back, eight times; clap the hands.
4. Right hand, retain position.
5. Left hand thrown back, eight times; clap the hand.
6. Alternate, clap the hands.
7. Simultaneous, clap the hands.

### VI. Hand and Finger Exercise

*Command—Hand Exercise—Position—Play!*

1st Movement.
1. Stand erect, with hands at side, and fingers firmly closed.
2. Right hand twist, as in boring with a gimlet, four times.
3. Left hand, four times.
4. Alternate, four times.
5. Simultaneous, four times.

2d Movement.
1. Right hand extended perpendicularly upward, rotate four times.
2. Left hand, four times.
3. Alternate, four times.
4. Simultaneous, four times.

3d Movement.
1. Right arm extended perpendicularly upward, with fingers spread apart, and shut, four times.
2. Left arm, four times.
3. Alternate, four times.
4. Simultaneous, four times.

### VII. Head and Neck Exercise.

*Command—Head and Neck Exercise—Position—Play!*

1st Movement.
1. Turn the head horizontally to the right so that the face will be on the shoulder, four times.
2. Turn the head horizontally to the left, four times.
3. Alternate.

2d Movement.
1. Bow the head to the front, four times.
2. Head backward, four times.
3. To the right, four times.
4. To the left, four times.

3d Movement.
1. To the front, once.
2. To the right, once.
3. To the back, once.
4. To the left, once.

### VIII. Arm Exercise.

*Command—Arm Exercise—Position—Play!*

1st Movement.
1. Palms together.
2. Arms extended, horizontal, **front.**
3. Right arm, four times.
4. Left arm, four times.
5. Alternate,
6. Simultaneous.

2d Movement.
1. Position like No. 1.
2. Swing right arm from the horizontal front up to the perpendicular, four times.
3. Swing left arm from the horizontal front up to the perpendicular, four times.
4. Alternate.
5. Simultaneous.

3d Movement.
1. Position as in No. 1.
2. Swing the right arm outward and backward, four times.
3. Swing the left arm outward and backward, four times.
4. Alternate.
5. Simultaneous.

### IX. Stepping Exercise.

*Command—Stepping Exercise—Position—Play!*

1st Movement.
1. Place the hands about the waist, thumbs in front.
2. Step obliquely to the right, front, four times.
3. Step obliquely to the left, front, four times.
4. Alternate.

2d Movement.
1. Same position as in No. 1.
2. Step obliquely to the right, rear, four times.
3. Step obliquely to the left, rear, four times.
4. Alternate.

3d Movement.
1. Same position as in No. 1.
2. Step to the right, four times.
3. Step to the left, four times.
4 Alternate.

### X. Slapping Exercise.

*Command—Slapping Exercise—Position—Play!*

1st Movement.
1. Arms extended horizontally front.
2. Palms together.
3. Strike left hand with right, four times.
4. Strike right hand with left, four times.
5. Alternate.
6. Simultaneous.

2d Movement.
1. Arms perpendicular.
2. Strike left hand with right, four times.
3. Strike right hand with left, four times.
4. Alternate.
5. Simultaneous.

3d Movement.
1. Arms placed behind.
2. Strike left hand with right, four times.
3. Strike right hand with left, four times.
4. Alternate.
5. Simultaneous.

### XI. Chopping Exercise.

*Command—Chopping Exercise—Position—Play!*

1st Movement.
1. Hands raised above the head to the right, four times.
2. Hands raised above the head to the left, four times.
3. Alternate.

2d Movement.
1. Hands raised above the head to the left, four times.
2. Hands raised above the head to the right, four times.
3 Alternate.

### XII. Moving Exercise.

*Command—Moving Exercise—Position—Play!*

Movements.
1. Arms to the right.
2. Move horizontally to the left, in front, four times.
3. Move horizontally to the left, at the right, four times.
4. Move horizontally to the left, behind, four times.
5. Move horizontally to the left, at the left, four times.

### XIII. Sawing Exercise.

*Command—Sawing Exercise—Position—Play!*

Movement. –
1. Elbow above the line of the shoulder.
2. Down in front, four times.
3. Turn to the right, down, four times.
4. Turn to the rear, down, four times.
5. Turn to the left, down, four times.
6. To your place.

### XIV. Trunk Exercise.

*Command—Trunk Exercise—Position—Play!*

Movements. –
1. Hand about the waist, thumbs in front.
2. Bend the body horizontally front, four times.
3. Bend the body horizontally to the left, four times.
4. Bend the body horizontally to the rear, four times.
5. Bend the body horizontally to the right, four times.

### General Remarks and Explanations.

These exercises are intended for those teachers who have learned no system. They are simple, and by taking one exercise at a time the whole series may soon be put in practice. Much of the benefit derived from Calisthenics is from the alternation of rigid and relaxed muscles. There should be an accent to the motion, and that accent should occur on the outward movement; hence the muscles should be firm in the outward movement, and relaxed in the return.

### The Position.

The position the children are to assume should be explained before the command is given. When the "Exercise" is called, all should take position instantly. The beauty of the exercise consists in regularity.

On the word "Play," the musician should begin instantly, and the pupils should begin at the same instant, following their leader.

### Explain all the Movements.

The teacher should take pains to explain all the movements before he requires execution; and then see that all understand them, else there will be no uniformity in the movements.

### Direction of Movement.

This order is tabulated under the head of "Calisthenics," and it means the line of course in which we move. All movements made before are called "front;" those made directly on the right or left are called "extended;" those made between the "front" and "extended" are called "oblique;" and, lastly, those made back of the extended are called "back-oblique," or backward. All motions made on a line with the shoulder are called "horizontal;" all below a line with the shoulder are called "descending;" all above a line with the shoulder are called "ascending."

### Order of Movement.

This means the successive order in which the right or left hand, arm, etc., are used in the movements.

Single movement is when the movements are made first with the right hand or arm ; then with the left, each a certain number of times, generally four ; second, alternate with the right and left a corresponding number of times ; and third, a stimultaneous movement of the right and left the same number of times.

Double order is made with both hands simultaneously.

### Time.

The best way to teach the time, is to count, at first. Count one on the outward movement; two on the return, and so on, till you count eight. Commence all movements with the right hand, arm, etc. Count eight for the right hand, then eight for the left, eight on the alternate movement and eight on the stimultaneous action.

### List of Books on Calisthenics and Gymnastics.

Root's School Amusements—A. S. Barnes & Co., New York. $1.50.

Smart's Manual of Calisthenics—Wilson, Hinkle & Co., New York. 20 cts.

Potter's Manual of Reading—Harper & Brothers, New York. $1.40.

Diadem of School Songs, by Wm. Tillinghast—Davis, Bardeen & Co., Syracuse. 50 cts.

# SCHOOL ORGANIZATION.

## INTRODUCTORY.

School organization is a system of arrangement designed to secure constant employment, efficient instruction and moral control. It aims at providing the means of instructing and educating the greatest number in the most efficient manner, and by the most economical expenditure of time and money.

Organization puts each child in its proper place; allots to each class proper work,—proper in kind and amount; secures to each subject the time that is justly its due; arranges the work, both as to place and kind, so as to preserve a quiet room, and properly distributes the work, so that no interest of the school in any of its parts shall suffer.

I know full well the anxiety with which the young and inexperienced teacher anticipates the opening of the first school. The first questions that arise in the mind are: *What shall I do? How shall I do it? When shall I do it?*

To organize, govern and discipline a school successfully, requires in-born qualities. It is very much easier for a general to command an army, than for a teacher to govern a school; for a general has to consider only immediate results, besides being invested

with absolute power, while the teacher has to consider chiefly results to be attained in the future, and he is forbidden by considerations of his own and the pupils' good, to exercise other than qualified authority.

### Choice of a School.

The young teacher should not select a difficult school at first. Too many teach for the pecuniary reward, and others do not consider whether or not they are adapted to particular schools.

### Contract.

The contract should be in writing and express definitely the conditions. Both parties should have a copy. Like all other business, it should be done in a *business-like manner*. Printed forms for these contracts may be obtained of Davis, Bardeen & Co., Syracuse, N. Y., at ten cents a pair.

### Preparation for First Day's Work.

This is all important. The seeds of failure are frequently sown the first hour. The teacher should have a plan in his mind ; *just what he will do ; how he will do it ; and when he will do it.* He should not try to accomplish too much the first day ; must not be too anxious about courting the favor of pupils—good discipline cannot be established in a day ; should use words expressive of friendly feelings and good intentions; should not let frowns cloud the brow, even though all may not be, at the outset, just as one might wish ; should leave nothing to the impulse of the moment ; should be firm, watchful and uniform, and should endeavor to make the *first impression* pleasant.

### The First Exercises.

Do not attempt to hear recitations the first morning ; after opening the school with a general exercise, let them all join in singing some familiar piece ; this will dispel embarrassment.

### Enrolling the Pupils.

Write on the board the requirements, and pass slips of paper, letting all that can write hand in the following, viz :

1. The full christian name.
2. The full christian name of parent or guardian.
3. Residence.
4. Age.

Let some pupils pass around and take the names, etc., of those who cannot write.

### Classification.

In the highest classes institute a written examination. This can be made a test exercise in spelling, penmanship, and the use of language. The questions need not be difficult ; ten questions upon the different subjects will test the knowledge of the pupils as well as twenty. The pupils that cannot write should be examined orally, and a record kept of the standing of each pupil. It is not best to make sudden and radical changes ; better adopt the classification of your predecessor, if you have not confidence in your own ability.

Make all changes gradually and quietly and let the pupils see that it is for their interest and the good of the school.

### Forming Classes.

After having carefully graded the pupils, then attempt a temporary classification. It will be impossible to adopt a permanent classification at first, and the pupils should so understand it.

There should not be more than four grades in the public schools. The primer and first reader should constitute the D grade; the second reader, the C grade; the third reader, the B grade; and the fourth reader the A grade. The number of classes in each grade should not exceed four, and, by *close classification*, they need not exceed this number.

### Programme of Exercises.

The teacher is now ready to draw up the *plan of work*, specifying the number of classes and the time of beginning, ending, and the length of each recitation.

The programme should provide for study as well as for recitation.

Advantages of a programme :—

1. It lessens the labor of teaching.
2. It makes teaching more effective.
3. It promotes good order.
4. It cultivates systematic habits.
5. It promotes the ambition of pupils.

While it is well to follow the programme carefully, yet the organization and discipline must not be too mechanical, or pupils will tire of it. No change in classes should be made for visitors, unless by special request.

### Class Movements.

Pupils should be seated according to classification, so far as practicable, and graded according to height, seating the tallest pupils in the rear. The teacher should have the entire charge of seating the pupils. Teachers should change seat-mates when advisable. As a rule it is not best to place pupils of the same temperament together. The class movements should be conducted with precision, and no disorder should be allowed in the room. In no instance should the school-room be used as a play ground.

### Proper Care of the School-Room.

The pupils should not be allowed to deface, destroy, or in any way injure the school property. They should be required to keep the school-room in perfect order, and have a place for their books and implements of work.

### Special Privileges.

But very few special privileges should be granted to pupils, such as leaving seats, speaking to one another, asking questions of teachers, making complaints to teachers, receiving help from the teacher, etc. In a thoroughly organized school the granting of these privileges take but little, if any time.

### Keep up a Spirit of Work.

*Extract from the Report of Supt. William T. Harris, St. Louis.*

Listlessness in the school-room is traced to :

1. Lack of proper ventilation.
2. Lack of equal temperature.

3 Too long recitations for the strength of the pupils.

4. Injudicious and too frequent concert recitation.

5. The practice of "keeping in" pupils at recess or after school for failure in lessons or misbehavior.

6. Lack of definite analysis of the subject of the lesson by the teacher during recitation.

7. Substitution of individual explanation on the part of the teacher for correction (in the class) of bad habits of study.

On entering the room of a careless or inexperienced teacher, the visitor is struck by the lifeless atmosphere that seems to pervade both teacher and pupils. The pupils all turn their gaze upon him as he enters and stare abstractedly, forgetful of the presence of the teacher and of the purpose of their attendance at school. The teacher languidly, or with a slight flush of surprise and embarassment, invites to a seat. After a little, the pupils settle back into the condition prevailing berore the entrance of the visitor. The pupils at their seats are variously employed : many are leaning over their desks, their faces full of *ennui;* others are endeavoring to relieve the tedium of the slow creeping hour by ingenious devices of their own—pin-traps, spit-balls, picture-books under the desks, writing notes to their fellows, making caricatures on slates, scratching furniture, telegraphing on a small scale, etc.,—some have books open before them, others not ; the class that is "on the line" for recitation are leaning against the blackboards behind them, or against the desks in front of them ; some are pay, ing attention to the lesson, others are busied with the

pupils at their seats. The teacher is distracted and confused.

Take the room as a whole, and the lack of the one spirit that should prevail in it is painful to witness. The almost audible sigh of the whole is: "Oh, that school were out!" The visitor thinks of the Lostos-Eaters and of the

"Land
In which it seemed always afternoon;
All round the coast the languid air did swoon,
Breathing like one that had a weary dream."

The visitor (who has come to inspect the school) looks carefully into the methods of instruction and discipline in order that he may discover the primary causes of this failure, and suggest its remedy.

He notes: "This teacher has no force; she has no hold over these pupils; she does not make up her mind at the outset that she will have *this* and *not that;* she commands incessantly, and does not wait to see whether any command is obeyed; she obviously has not prepared herself on the lesson before coming to school, for, see, she holds the text-book in her hand and is closely confined to the text while she asks questions; at obvious allusions to the subject of the previous lesson she does not pause to call it up, nor does she illustrate the difficult portions of the lesson for to-day; while she is looking in the book for the next question a pupil has answered the previous one inaccurately, or has omitted the essential point; she treats the important and unimportant questions alike; no wonder the pupils are listless!"

But he sees that this phase is not the only one wherein the teacher acts like a novice; in the more

general programme similar defects manifest themselves which he notes accordingly:

The class is too large and too much time is taken to hear it; the lesson for the next day is too long, and no directions are given as to how to study it; all those who fail are kept in at recess or after school; some receive individual explanations, and consequently get in the habit of crowding around the teacher's desk, and of depending on his direct assistance. Added to this, the teacher hears many parts of the lesson in concert, and the consequence is, only those portions of the lessons are dwelt upon that are most mechanical, for only such can be recited in concert —discriminating and original answers cannot be in concert—concert answers must be something *verbatim* and short answers: "Yes, sir," "No, sir," "Atlantic Ocean," and the like. Complete answers are made by the smart pupils, while the dull ones follow the lead and join in towards the end of the answer. The bright pupil answers the whole: "twenty-five thousand miles;" the less bright one says: "five thousand miles;" and the dull one: "thousand miles;" the dullest comes in at the word "miles." These pupils have not the power or discipline of mind to concentrate their attention for so long a recitation; they get fatigued before it is through, and listlessness is the result.

Again: "The ventilation is not attended to, and the impure air causes incipient congestion of the brain, and a few of the delicate ones have headaches, while all feel that apathy and indifference which is its premonitory symptom."

"Most important is the failure of the teacher; she does not practise a system of *definite analysis* of the lesson at recitation. She asks probing questions only seldom; the pupil is not made to seize the subject and analyze it till he thoroughly understands it. The consequence is, he does not know how to study the next lesson, nor when he has learned it, and therefore does not study at his seat, having no definite sense of his deficiency and of his ability to overcome it."

These causes of failure when generalized may be traced to one prevailing defect on the part of the teacher. And this may be described thus: The teacher fails because she does not pay careful attention to the power for work which her pupils actually possess, and so lay out tasks and *secure their accomplishment* as to increase constantly this power for work. Previous preparation on the part of the teacher is indispensable for this result. Everything should be digested by the teacher before entering the schoolroom; she should *re-inforce the moments by the hours*, and thus be able at all times to bring to bear the entire weight of her character upon the pupil. The practice of keeping the pupil in at recess for failure in lessons is very baneful in its effects. The cause of the failure is probably owing to inability to concentrate his mind, and here the cure prescribed is calculated to heighten the disease. The teacher should get the lesson into such shape that the pupil can master it by a general assault, and he should not be allowed—at home or in school—to make a dissipated, scattering attack on it.

# PROGRAMME FOR AN UNGRADED SCHOOL.

### D. Class—1st Term.

Reading—First Reader, half through ; give special attention to tone.

Numbers—(*a*) Learn figures.
(*b*) Add and subtract by ones with tables.
(*c*) Count, notate and numerate to 50.

Spelling—All the new words in the reader.

Writing—The words learned in reading and writing the pupil's own name with correct use of capitals.

### D. Class—2d Term.

Reading—Last half of Reader.

Numbers—(*a*) Addition and Subtraction and Multiplication by 1's and 2's ; Min. and Prod. not to exceed 24.
(*b*) Roman Numerals found in reader.

Spelling—Same as first term.

Writing—Words learned with proper use of capitals.

Place—(*a*) The cardinal and semi-cardinal points and applications.
(*b*) Lessons preparatory to giving the boundary of the room, such as ceiling, corners, sides, &c.

Color—Distinguishing and naming color.

Size—General idea of size ; large and small ; larger and smaller ; largest and smallest. Also, long and short, with the three degrees. Also, height, with the degrees.

### C. Class—1st Term.

Reading—Half Second Reader; special attention given to pronunciation and tone.

Numbers—(*a*) Addition and subtraction and multiplication with tables of 1's, 2's and 3's; sum or min. not to exceed 36.

(*b*) Addition of columns of tens and units; no figures greater than three, and the sum of no column greater than 36.

(*c*) Roman Numerals with reading.

Spelling—All words used in reading by sound and letter.

Writing—Instruction from board.

Place—(*a*) Draw map of streets or roads of Village or District, and locate buildings.

(*b*) Name town and district officers.

### C. Class—2d Term.

Reading—Finish Reader.

(*a*) Give instruction in vowels.

Numbers—(*a*) Addition and subtraction of 1's, 2's, 3's, 4's, 5's; sum or min. not to exceed 60.

(*b*) Multiplication and division; the sum, multiple and quotient not to exceed 12.

(*c*) Notation and numeration to 1,000,000

Writing—Copy on the board.

Spelling—Words in reading lesson.

Place—(*a*) Teacher have map of county.

(*b*) Children name, locate and bound towns.
(*c*) Tell direction each is from the other.
(*d*) Name towns through which railroads pass.
(*e*) Name and locate villages of each.
(*f*) Name and locate creeks and rivers.
(*g*) Give population of towns and county.
(*h*) Explain and name county seat.
(*i*) Name town officers and duties of each.
(*j*) Draw map of county and give sq. miles.
(*k*) Review.

**B. Class—1st Term.**

Reading—Half of Third Reader. Particular attention to pronunciation and modulation.

Numbers—Finish division—written and intellectual, and review. Combination in notation and numeration to 1,000,000.

Spelling—Words in Third Reader—abbreviations found in reading or spelling.

Penmanship—Instruction from board and No. 4 Writing-Book.

Grammar—Primary, first-half.

Geography—One-half Primary, with drawing maps of same.

**B. Class—2d Term.**

Reading—Finish Third Reader. Particular attention to pronunciation, modulation and inflection.

Numbers—Decimal and common fractions ; review.

Spelling—Words in Reader and Geography.

Penmanship—Class exercises and No. 5.

Grammar—Finish Primary.

Geography—Primary with map drawings for same.

**A. Class—First Term.**

Reading—Fourth Reader; attention to thought, expression and pronunciation, to precede the exercise.

Arithmetic—Denominate numbers and simple and compound interest.

Spelling—In word-book, words written.

Penmanship—Book 6; class instruction from board.

Grammar—Orthography and etymology.

Geography—With map-drawing.

**A. Class—2d Term.**

Reading—Fourth Reader; attention as before.

Arithmetic — Percentage, insurance, commission, profit and loss, taxes, discount, government securities and proportion.

Spelling—Word-book, words written.

Penmanship—Book 7, and class exercise.

Grammar—Syntax and review.

Geography.

School Exercise in History—Teacher write a fact upon the board, talk about it and relate incidents which they have gathered regarding it. Review each day.

Civil Government—The same.

**Programme of Exercises for an Ungraded School.**

| TIME.* From | TIME.* To | D GRADE. | C GRADE. | B GRADE. | A GRADE. | Time. |
|---|---|---|---|---|---|---|
| 8 50 | 9 00 | Opening..... | Exercises..... | Roll Call ..... | Rem'ks--Singing. | 10 |
| 9 00 | 9 15 | *Reading*..... .... | Reading..... .... | Reading..... ... | Reading..... ... | 15 |
| 9 15 | 9 30 | Writing..... | *Reading*. ..... | Reading..... . | Reading..... .... | 15 |
| 9 30 | 9 50 | Writing..... .... | Writing..... | *Reading*..... | Arithmetic ..... | 20 |
| 9 50 | 10 10 | Out-door ..... | Out-door ..... | Arithmetic ..... | *Reading*..... .. | 20 |
| 10 10 | 10 25 | ..... | Recess. | ... ..... | ... ..... | 15 |
| 10 25 | 10 30 | ..... | Singing | all grades. | ..... ..... | 5 |
| 10 30 | 10 45 | *Spelling*..... | Numbers. ..... | Arithmetic ..... | Arithmetic ..... | 15 |
| 10 45 | 11 00 | Writing " .... | *Numbers*..... | Composition..... | Arithmetic .... | 15 |
| 11 00 | 11 20 | Writing " .... | Numbers..... | *Arithmetic*..... | Hist. or Civ. Gov. | 20 |
| 11 20 | 11 40 | Out..... | Out. . ..... | Arithmetic..... | *Arithmetic* ..... | 20 |
| 11 40 | 12 35 | ..... ..... | Noon. | ..... | ..... ..... | 55 |
| 12 35 | 12 40 | ..... .... ... | Singing | all grades..... .. | ..... | 5 |
| 12 40 | 1 00 | *Penmanship*..... | *Penmanship*..... | *Penmanship* ..... | *Spelling*..... | 20 |
| 1 00 | 1 15 | *Numbers*..... ... | Place..... . .... | Geography..... | Geography ..... | 15 |
| 1 15 | 1 30 | Writing.. . .... | *Place* .. ..... | Geography... ... | Geography .. ... | 15 |
| 1 30 | 1 50 | Tables. ..... | Place..... ..... | *Geography*... .... | Grammar..... | 20 |
| 1 50 | 2 10 | Out..... | Out ..... | Grammar . .. ... | *Geography*..... | 20 |
| 2 10 | 2 25 | ..... .... | Recess. | ..... ..... | .. ..... | 15 |
| 2 25 | 2 40 | *Color, size, &c*... | Spelling..... .... | Grammar..... | Grammar ..... | 15 |
| 2 40 | 2 55 | Drawing..... | Spelling ..... | Spelling ..... | *Grammar*..... | 15 |
| 2 55 | 3 15 | Drawing... ..... | *Spelling*..... | Spelling ..... | Hist. & Civ. Gov. | 15 |
| 3 15 | 3 30 | Dismiss..... | Dismiss..... | *Grammar*..... | Spelling ..... | 15 |
| 3 35 | 3 50 | ..... | ..... .. | *Spelling*..... | *Spelling*..... | 20 |
| 3 50 | 4 00 | .. ..... | ..... ..... | *Miscellaneous*.... | *Miscellaneous*.... | 10 |
| 4 00 | 4 05 | ..... | Singing. | Dismission..... | ..... ..... | 5 |

*The Recitations are given in *Italic* letters ; the study exercises are shown in Roman.

## Programme of Exercises for a County

| MORNING SESSION. | MONDAY. | TUESDAY. |
|---|---|---|
| 9 00 to 9 02—Roll Call. | Roll Call. | Roll Call. |
| 9 02 to 9 10—Dev. Exer. | Devotional Exer. | Devotional Exer. |
| 9 10 to 9 15—Singing. | Singing. | Singing. |
| 9 15 to 9 50—Instruct'n. | School Organiz'n. | School Managem't. |
| 9 50 to 9 55—Rest. | Rest. | Rest. |
| 9 55 to 10 30—Instruct'n. | Civil Government. | Language. |
| 10 30 to 10 40—Rest. | Rest. | Rest. |
| 10 40 to 11 15—Instruct'n. | Phonic Analysis. | Arithmetic. |
| 11 15 to 11 20—Rest. | Rest. | Rest. |
| 11 20 to 11 55—Instruct'n. | Language. | Civil Government. |
| 11 55 to 12 00—Singing. | Singing. | Singing. |
| **AFTERNOON SESSION.** | **MONDAY.** | **TUESDAY.** |
| 2 00 to 2 02—Roll Call. | Roll Call. | Roll Call. |
| 2 02 to 2 10—Singing. | Singing. | Singing. |
| 2 10 to 2 45—Instruct'n. | Number. | Grammar. |
| 2 45 to 2 50—Rest. | Rest. | Rest. |
| 2 50 to 3 25—Instruct'n. | Primary Reading. | Geography. |
| 3 25 to 3 35—Rest. | Rest. | Rest. |
| 3 35 to 4 10—Instruct'n. | Spelling. | Reading. |
| 4 10 to 4 15—Rest. | Rest. | Rest. |
| 4 15 to 4 50—Instruct'n. | Penmanship. | History. |
| 3 50 to 5 00—Miscell'n's. | Query Box. | Query Box. |
| **EVENING SESSION.** | **MONDAY.** | **TUESDAY.** |
| 7 30 to 7 35—Singing. | Singing. | Singing. |
| 7 35 to 8 00—Discussion. | Discussion. | Discussion. |
| 8 00 to 9 00—Lecture. | Lecture. | Lecture. |

Sessions will begin promptly on time; twenty minutes' notice

## Teachers' Institute of One Week.

| WEDNESDAY. | THURSDAY. | FRIDAY. |
|---|---|---|
| Roll Call. | Roll Call. | Roll Call. |
| Devotional Exer. | Devotional Exer. | Devotional Exer. |
| Singing. | Singing. | Singing. |
| Phonic Analysis. | Arithmetic. | School Discipline. |
| Rest. | Rest. | Rest. |
| Map Drawing. | History. | Grammar. |
| Rest. | Rest. | Rest. |
| Reading. | Oral Instruction | Elem. Nat. Science |
| Rest. | Rest. | Rest. |
| Grammar. | Language. | Physic'l Geog'phy. |
| Singing. | Singing. | Singing. |

| WEDNESDAY. | THURSDAY. | FRIDAY. |
|---|---|---|
| Roll Call. | Roll Call. | Roll Call. |
| Singing. | Singing. (Recit'n. | Singing. |
| Teach'g Alphabet. | How to conduct a | Theory & Practice. |
| Rest. | Rest. (ography. | Rest. |
| Composition. | Mathematical Ge- | Physiology. |
| Rest. | Rest. | Rest. |
| Drawing. | Spelling. | Review. |
| Rest. | Rest. | Rest. |
| Geography. | Elocution. | Closing Exercises. |
| Miscellaneous. | Query Box. | |

| WEDNESDAY. | THURSDAY. | FRIDAY. |
|---|---|---|
| Singing. | Singing. | Singing. |
| Discussion. | Discussion. | Discussion. |
| Lecture. | Lecture. | Lecture. |

will be given by the ringing of the bell.

## Another Programme of Exercises for an Ungraded School.

| TIME. From | TIME. To | A GRADE. | B GRADE. | C GRADE. | D GRADE. | Minutes. |
|---|---|---|---|---|---|---|
| 8 50 | 9 00 | **OPENING EXERCISES**—Roll Call, Remarks, and Singing. | | | | 10 |
| 9 00 | 9 15 | READING. | Reading. | Reading. | Reading. | 15 |
| 9 15 | 9 30 | Printing. | READING. | Reading. | Reading. | 15 |
| 9 30 | 9 50 | Printing. | Arithmetic. | READING. | Reading. | 20 |
| 9 50 | 10 10 | Printing. | Arithmetic. | Arithmetic. | READING. | 20 |
| 10 10 | 10 25 | **RECESS.** | | | | 15 |
| 10 25 | 10 30 | **Singing for All Grades.** | | | | 5 |
| 10 30 | 10 45 | SPELLING. | Arithmetic. | Arithmetic. | Arithmetic. | 15 |
| 10 45 | 11 00 | Writing. | ARITHMETIC. | Arithmetic. | Arithmetic. | 15 |
| 11 00 | 11 20 | Writing. | Arithmetic. | ARITHMETIC. | Arithmetic. | 20 |
| 11 20 | 11 40 | Writing. | Arithmetic. | Arithmetic. | ARITHMETIC. | 20 |
| 11 40 | 12 35 | **NOON.** | | | | 55 |
| 12 35 | 12 40 | **Singing for All Grades.** | | | | 5 |
| 12 40 | 1 00 | Printing. | Writing. | PENMANSHIP AND SPELLING. | | 20 |
| 1 00 | 1 15 | READING. | Spelling. | Geography. | Geography. | 15 |
| 1 15 | 1 30 | Printing. | SPELLING. | Geography. | Geography. | 15 |
| 1 30 | 1 50 | Printing. | Language Lessons. | GEOGRAPHY. | Geography. | 20 |
| 1 50 | 2 10 | Printing. | Language Lessons. | Composition. | GEOGRAPHY. | 20 |
| 2 10 | 2 25 | **RECESS.** | | | | 15 |
| 2 25 | 2 40 | SPELLING. | Language Lessons. | Composition. | Grammar. | 15 |
| 2 40 | 2 55 | Writing. | LANGUAGE. | Composition. | Grammar. | 15 |
| 2 55 | 3 15 | Writing. | Language. | COMPOSITION. | Grammar. | 20 |
| 3 15 | 3 35 | Writing. | Language. | Composition. | GRAMMAR. | 20 |
| 3 35 | 3 55 | **Oral Lessons in Science, Morals, and Government.** | | | | 20 |
| 3 55 | 4 00 | **Singing and Dismission.** | | | | 5 |

The recitations are given in Capitals: the study exercises are shown in Roman letters.

# SCHOOL MANAGEMENT.

## INTRODUCTORY.

The strength, or it may be the weakness, of a teacher, is no where so clearly shown as in the general management of the school.

For the maintenance of healthy discipline, it is not necessary that there should be great severity in the punishment of offences.

*Firmness* is the first requisite to school management; the pupils must understand that the teacher has absolute control; that his authority is supreme; and this in most cases is sufficient in itself to hold the evil propensities of pupils in check.

On the contrary, a lack of firmness will encourage the spirit of revolt, and make necessary frequent resorts to punishments of one kind or another.

School government should be administered in such a way that *it shall be a reign of justice.* The sense of justice is strong even in the case of vicious children. Offences will occur in the best conducted schools, but the teacher must discriminate between *trivial*, *aggravated* and *serious* or *flagrant offences.*

Children know that disobedience and wrong-doing in general deserve punishment; and providing that

the degree of punishment does not exceed its just bounds, no feeling of resentment will be cherished toward him who inflicts the penalty.

A teacher should not, generally, make a rule until there is a *necessity* for it. When the teacher, through close deliberation, thinks it to be for the best interest of the school to make a rule, then, and not until then, should he make it. It should then be enforced, and for a violation of the rule, a penalty should be inflicted. Children soon learn to feel a contempt for a teacher who does not insist on respectful obedience; they instinctively admire that firmness and decision which metes out to offenders their deserved punishment. Complete success in school management at the *outset* is not to be expected ; only by slow degrees can dexterity in governing be attained. Common sense is an important element in management. A noble Quaker once said, "There are three things a man needs to make him successful ; first, good health; second, religion ; and third, good sense ; if he cannot have but *one* of these, let it be good sense ; for God can give him grace, and God can give him religion, but no man can give him *common sense.*"

### Administration.

The most difficult part of school work is the administration. How often have I been asked, "tell me how to govern my school ?" The subject is, indeed, one of the most important which can engage the attention of teachers. It is one which calls for experience, judgment and wisdom. Every pupil has a conscience, which decides on all actions contem-

plated or begun—decides whether the act is right or wrong. One rule only, then, need be made: "Do nothing which your conscience tells you is wrong." This covers the whole ground and a score of rules will only weaken it. Some may say their conscience is depraved, but it is never entirely seared.

Too much government may prove as injurious as too little; both may prove failures. The teacher should govern as little and teach as much as possible. In some schools there is more of government than of teaching. The pupils should understand that in no instance will the teacher stop the recitation to manage a school or discipline a pupil. The teacher, if he observes that a pupil is disorderly during recitation, should silently mark him, and attend to the offence during recess or at some convenient opportunity.

All discipline has its spring in the character of the teacher. It depends more on the man than on his means. It is the character of the one that imparts efficacy to the action of the other.

### Character, not Reputation, is the Source of Success.

Character is the source of success or failure in all pursuits. So apparent is its influence in schools that one who had many opportunities for observing has said that, "a teacher has more need to watch himself than his children, as the evils found in a school are often traceable to some omission, inconsiderateness, hastiness of temper, want of firmness, or absence of principle in himself."

The school becomes a reflector of the teacher, and in every case it will be a perfect reflector. A teacher cannot appear what he is not in the presence of the school. The thing is vain. Their eyes pierce through every disguise.

He must be what he seems, and must seem what he is.

### Teachers must Possess High and Noble Qualities.

Love, honor, truthfulness sincerity, consistency, justice, patience and judgment must be elements of a teacher's character. Earnestness and cheerfulness are also elements. Earnestness has great influence over children; cheerfulness is sunshine.

Sympathy with them in their trials, sports and labors is an element of power: but fear, NEVER.

Is there not a lesson prettily expressed in the following:

"He who checks a child with terror,
Stops its play, and stills its song,
Not alone commits an error,
But a great and moral wrong.

"Give it play, and never fear it,—
Active life is no defect;
Never, never *break* its spirit,—
*Curb* it only to direct.

"Would you stop the flowing river,
Thinking it would cease to flow?
Onward it must flow forever,—
Better teach it *where* to go."

### Teacher Should Use Low Tones.

Very particularly must it be kept in view by the teacher that quietness in governing is most naturally allied with good discipline. A loud voice reiterating commands in an authoritative tone, is often considered favorable to discipline. It is not really so. A quiet way of issuing orders is favorable to quietness of disposition among the pupils. It conveys a double impression—that obedience is expected, and that there is a large reserve force at command, if the teacher should have occasion to need it to use. One thing deserving careful consideration is the importance of bringing the habit of obedience very early into play.

If children are accustomed from their very earliest school experience to move together in accordance with fixed signals, the work of discipline is greatly simplified. Simultaneous movements—as in rising, taking seats again, or marching—always contribute to the result in a very pleasing way. We would encourage the daily drill in *Disciplinary Exercises* and *Calisthenics*, as well calculated to enforce prompt obedience.

The first thing that a child should learn is *obedience*. All governments and all peoples have regarded filial disobedience with great disfavor. The teacher should supplement the parent's work.

## School Discipline.

### A.—Offences against the School and Means of Correcting.

*I. Communication.*

1. Suggestion, advice, admonition.
2. Reproof,—make it unpopular.
3. Restraint of personal liberties.
4. Separate Seatmates.
5. Printed reports.

*II. Loud Study.*

1. Suspend exercises, until quiet
2. Train pupils to study with closed lips.
3. Reproof.

*III. Laughing.*

1. Suspension of exercises.
2. Pupils laugh until weary of it.
3. Reproof.

*IV. Moving Noisily.*

1. Train the pupils how to walk, to stand, to sit, and to move.

2. Always admonish them, when a command is violated.

3. Let the pupils try again, until they do it quietly.

4. Slates should be covered. Teachers should set the example.

*V. Questions during Recitation.*

1. Prohibit them.
2. Show impropriety.
3. Refuse to notice signals.
4. Reproof.

*VI. Litter on the Floor.*

1. Encourage neatness.
2. Require the floor to be in order.
3. Carefully inspect the floor in the presence of the pupil, without any remarks.

*VII. Writing Notes.*

1. Give them all the work they can do.
2. Read them, omitting names.
2. Ask for the writer.
4. Destroy the notes without reading them.

*VIII. Uncleanliness.*

1. Send pupils out.
2. Send pupils home.
3. Insist upon cleanliness.

*IX. Disorder.*

1. A place for every thing, and every thing in its place.
2. No changing of position, without permission.
3. Always to be held accountable for the care of property.
4. Quiet attention when addressed.

REMARK.—Instruct, train and drill pupils in habits of order, manners and morals.

B.—OFFENCES AGAINST PUPILS, AND MEANS OF CORRECTING.

*I. Tattling.*

1. Shun impropriety—leads to gossip and slander.
2. Refuse to notice it.
3. Reprove.
4. Show its sinfulness.

*II. Quarrelling.*

1. Persuade of sinfulness.
2. Oblige to play alone.
3. Make it unpopular.

*III. Untruthfulness.*

1. Find out the cause.
   1. Ignorance.
   2. Thoughtlessness.
   3. Selfishness.
   4. Innate tendency.
2. Tell them the effect.
   1. Loss of reputation.
   2. Loss of character.
   3. Loss of conscience.
   4. General demoralization.

Cultivate honor.

# A Word in Conclusion.

The facts of the past, the claims of the present, and the responsibilities of the future suggest so much which might be said, that I am somewhat perplexed in deciding upon what I ought to say. Nevertheless I have concluded to say a few words to the readers of the *School-Room Guide*.

**To Commissioners and Superintendents.**

Upon you rest, to a great extent, the success of the schools and the advancement of the educational interests of this country.

It is by the recommending and licensing of competent and efficient teachers that you are the most successful in promoting the interests of your charge. Let the teachers recommended by you be selected more with reference to social culture, *exalted moral character*, the development of *true manhood* and *womanhood*, than to either scholarship or talent. This you can do by selecting and recommending only such persons as shall illustrate in their lives the moral lessons which should be set as an example in schools.

You stand pledged to further the interests, not only of literature and science, but of the sublimest type of morality.

If you would redeem this pledge you will not license as a teacher any one who violates the law of moral purity, who gives to social dissipation the hours that belong to sleep, or who indulges in any practice of vice. A *sacred trust* is committed to you, which, if faithfully and wisely discharged, shall make your own day beautiful and scatter blessings doing the pathway of coming years.

**Conclusions drawn from Experience.**

An experience of twenty-five years in the field of education has secured principles and conclusions which may be considered not only general statements, but facts. One fundamental fact thus gained is, that the school should be an appendage of the family, fitted to train the ignorant and weak by self-sacrificing labor and love, and to bestow the most attention on the weakest, the most undeveloped and the most sinful. It is exactly the opposite course to which teachers are most tempted.

The bright, the good, the industrious, are those whom it is most agreeable to teach, who win most affection, and who promote the reputation of a teacher, and of a school or a college.

To follow this principle, then, demands more clear views of duty and more self-denying benevolence than ordinarily abound.

Another general principle obtained by experience is, that both quickness of perception and retentiveness of memory depend very greatly on the degree of interest excited.

By this same general principle of quickening intel-

lect by exciting interest, we have learned the importance of educating young persons with some practical aim, by which, in case of poverty, they may support themselves.

Another very interesting fact revealed by personal experience is, that there is no knowledge so thorough and permanent as that gained in teaching others.

Repeatedly has it been observed that a lesson or a problem supposed to be comprehended was imperfect, and corrected only in attempts to aid others in understanding it. In no other profession is the sacred promise, "Give and it shall be given unto you," so fully realized as in that of a teacher.

Another very important principle in acquiring knowledge is to take but few branches at one time and especially to have these associated in their character, so that each is an assistance in understanding and remembering the others.

There is a great loss of time and labor in the common method of pursuing four or five disconnected branches of study.

The mind is distracted by the variety and feels a feeble and divided interest in all.

In many instances, this method of cramming the mind with uninteresting and disconnected details serves to debilitate rather than to promote mental power. The memory is the faculty chiefly cultivated, and this at the expense of the others.

### To Teachers.

I trust that I shall not be considered as transcending the proper limit of remark, if I should submit to

your consideration some thoughts relating to the teacher's work.

In government, be gentle yet firm; not anxious to govern in those things which are innocent and harmless, but to restrain practices which are unquestionably immoral by the exercise of all the authority with which you are invested.

In order that you may worthily discharge the duties which thus confront you at the threshold of your field of labor, it is of the first importance that your own habits of thought and life be wholly correct.

No one is fit to govern others until he has learned to govern himself. Self-government and self-restraint are not possible without intelligence and virtue.

The task of the teacher is one of great responsibility and labor.

It is very much easier for a general to command an army than for a teacher to govern a school; for a general has to deal with and consider only immediate results, besides being invested with absolute power, while the teacher has to consider chiefly results to be attained in the future, and he is forbidden by consideration of his own and the pupil's welfare to exercise other than qualified power.

Then the military commander trains his soldiers to wield only weapons against material fortifications, while the teacher is to discipline those under his or her care and control, in the skilful use of the mental and moral powers, and prepare them to contend successfully against superstition, begotten of ignorance, against habits of thought and action which reach

their root far back in the centuries and "against spiritual wickedness in high places." Hence great statesmen and victorious generals are of little value in any country without efficient teachers.

To our public schools we must look for those who will be called upon to manage the affairs of families, to transact the business of town and of state, to fill the vacated bench of justice, to sit in the halls of legislation, and to direct and control the church of God.

Upon the character of our schools and teachers, therefore, depends the weal or woe of unborn millions, the prosperity or downfall of our boasted institutions.

As the concluding thought, teachers and friends, may we all bear in mind that our life in this world is but the preparatory department in the School of God.

Let us be so attentive to the lessons given us by the Great Teacher, that when the day of examination with us severally shall come, we may hear the glad welcome "well done," and at last gather beyond the River, under the cloudless sky, undimmed by the shade of night, there to renew our search for knowledge and our labors of love, with immortal faculties, which are least weary when most employed.

FINIS.

# APPENDIX.

## CLIMATE.

### INTRODUCTION.

The investigation of Climate and its modifications is the province of the student. It will be at once admitted that an acquaintance with the agencies is of paramount importance to every person.

The great agents are the air, rain, frosts, springs, brooks, rivers, glaciers, icebergs, mountains, and the sea.

It is Climate, and Climate alone, that determines mainly the character of all vegetable and animal life.

Climatic agents are not only now the most important and influential, but they have been so during all past geological ages. To account for all of the extraordinary changes of Climate would require many volumes. There is one point to which I

wish particularly to direct attention, viz., that I have studiously avoided introducing theories of a hypothetical nature.

The conclusions are in every case derived either from facts or from recognized principles.

The student should never rest until he gets at the reasons for what he sees about him. He should know something about the air he breathes, and the earth he lives upon, and about the relations between them. It is this great book of Nature, wherein each of us, young and old, may read, and go on reading all through life, without exhausting even a small part of what it has to teach us—it is this *great book—Air*, *Earth*, and *Sea*—which I would have you study.

# CLIMATE.

## ELEMENTS.

1. What is meant by climate?

When we speak of the heat or cold of the air, we include an element of climate.

2. Where does the heat come from?

It comes from the rays of the sun.

3. When do the sunbeams give the most heat?

The sunbeams give the most heat when they fall most directly upon any part of the earth.

4. When do the sunbeams give the least heat?

The sunbeams give the least heat when they fall the most obliquely.

5. When we speak of the heat or cold of the air, what word is generally used?

The word **temperature** is used.

6. When the air is very hot, what may be said of the temperature?

It is said to be very **high.**

7. When the air is very cold, what may be said of the temperature?

It is said to be very **low.**

8. In our country, which part of the day is warmest—morning, noon, or evening?

It is warmest at noon.

9. Why is it warmer at noon than in the morning or evening?

In the morning and the evening the rays of the sun fall in a *slanting* direction, and we receive comparatively few of the rays, because they are spread over a great surface.

At noon, when the sun is more or less *directly* upon us, then we receive more of them because they fall upon a comparatively small space.

Rays falling directly from overhead are said to be *vertical;* those falling in a slanting direction are said to be *oblique.*

NOTE.—A diagram put on the black-board will bring the matter home to the pupil's comprehension. Draw an horizontal upward curve; upon this draw two parallel vertical lines, two parallel oblique lines, and two parallel horizontal lines, striking at the same arc. The vertical sheaf of rays, striking the earth at noon, falls upon a small surface. In the middle of the forenoon or afternoon, the rays, falling obliquely, are spread over a greater surface. At sunrise or sunset no part of the sheaf touches the earth's

surface except its lower side, and most of the rays are lost in the atmosphere beyond. Tell the pupils that the sun always shines vertically, or nearly so, on the equator, and on a considerable belt beyond the equator on either side. Now, just as the sunbeams fall more directly at noon than in the morning or evening, so they fall more directly during the summer season than during the winter season.

10. In our part of the world is the sun ever directly overhead?

In our country the sun centre is never directly overhead, and his rays fall upon us in the *most nearly vertical direction* on the longest summer day.

11. When you speak of climate, then, what one element does it include?

It includes *temperature*—that is, the heat or cold.

*First Important Fact.*—**Temperature—that is, the heat or cold of a place—is one element of climate.**

---

12. Does climate include any other element?

It does; in some countries immense quantities of rain fall; in others none, or next to none, falls there. In the rainless districts it would be a *dry*

climate; where they have immense quantities it would be a *wet* or *damp* climate.

13. When we speak of a wet or dry climate, what word is generally used?

The word *moisture* is used.

14. When you speak of climate, then, what other element does it include?

It includes moisture—that is, whether it is wet or dry.

*Second Important Fact.*—**Moisture, or humidity—that is, whether it is wet or dry—is another element of climate.**

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15. What is the first element in climate?

16. What is the second element in climate?

17. Does climate include any other element?

It does; in some places they have a *windy* climate or a *stormy* climate.

18. When you speak of climate, then, what other element does it include?

It includes the *wind*—we will call it the *prevailing winds.*

*Third Important Fact.*—**The prevailing winds form an element of climate.**

19. What are the three elements of climate?

The three *elements* of climate are **temperature, moisture,** or **humidity,** and **prevailing winds.**

20. A climate that is neither too hot nor too cold, what may it be called?

A climate that is neither too hot nor too cold is called *temperate.*

21. When it is very hot or very cold, what is the climate said to be?

It is said to be extreme.

22. What does an extreme climate mean?

One that is either too hot or too cold.

23. Of a climate that is neither too wet nor too stormy, neither too hot nor too cold, what may be said?

A climate that is in every way fine and agreeable is called genial or salubrious.

## REVIEW.

How many elements are included in climate?

Three elements are included.

1. *Temperature*—that is, the heat or cold.

2. *Humidity*, or the state of being wet or dry.

3. The *prevailing winds.*

(*a*). A *temperate* climate means one that is neither too hot nor too cold.

(*b*). An *extreme* climate means one that is either too hot or too cold.

(*c*). A genial or salubrious climate means one that is in every way fine or agreeable, favorable to health.

NOTE.—The above facts under the REVIEW should be written on the board, and the pupils should be required to copy and commit them to memory.

## CAUSES AND MODIFICATIONS.

1. How can we tell what variety of climate any country has? What must we know before we can tell?

NOTE.—Before this division of the subject is taken up, a lesson should be given on the shape or form of the earth, lines upon the earth's surface, etc.

When we concluded our lesson upon the lines on the earth's surface, we stated that the earth, in its motion, like a wheel, revolves around an imaginary line called its axis.

The most northern point of the earth's surface is called the North Pole, and the most southern point the South Pole.

There is a line that is called the equator, drawn

at an equal distance from each pole, and dividing the earth-surface into equal parts.

The countries where the sun shines directly overhead, or perpendicularly, are those that are near this line—the **Equator**—(use a globe if you have one, or at least a map; place a diagram on the board, illustrate fully).

Here, $23\frac{1}{2}°$ north of the equator, is another line, called the Tropic of Cancer, and $23\frac{1}{2}°$ south of the equator is the Tropic of Capricorn.

Any country lying anywhere between the tropics is called **intertropical.** And since these countries have the sun directly overhead at certain seasons, and nearly so at all other seasons, they will have a hot climate. And as we go nearer to the poles it becomes colder, till at last, at the polar regions, we would find only ice and snow. We learn from these facts that the heat throughout the year is greatest at or near the equator, and diminishes gradually toward the poles. Thus we see that the climate of a place depends upon the *latitude* of the place. The latitude of a place is, therefore, of the first importance in determining its temperature, since a decrease of heat takes place with an increase of latitude as we travel, at the same level above the sea, from the equator toward the poles.

So it will be seen that temperature is the fundamental element in climate, and influences all the others.

## CAUSE.

At the equator, and within the tropics, the greatest heat is experienced, because the sun is always vertical to some place within those limits, and the solar action is more intense in proportion as the rays are vertical to the earth.

As we recede from the equator they fall more obliquely; and, because fewer of them are spread over a larger space, they are less powerful, and consequently have less influence on temperature.

It has been calculated that, out of 10,000 rays falling upon the earth atmosphere, 8,123 arrive at a given point if they fall vertically; 7,024, if the angle of direction is 50°; 2,821, if it is 7°; and only 5 if the direction is horizontal.

As it will be seen, the amount of heat produced by the sun upon the earth's surface is greatest near the equator, and diminishes gradually toward the poles, and that these causes are referable, **first**, to the spherical form of the earth, and the angle at which the sun's rays impinge upon the surface.

In the equatorial regions they are vertical to the surface of the earth, and there produce this maximum effect; but, on account of the curved outline of the globe, they fall more and more obliquely with increasing latitude, and the intensity of action diminishes proportionally. At the poles they are tangent to the surface, and their effect is zero.

From these facts we may deduce the following

### GENERAL LAW.

The **climate** of a place depends principally on its **latitude.**

### MODIFICATIONS.

When we ascend mountains, the air becomes cool, cooler, cold, colder, till finally we find ourselves amid snows that last all the year around.

We may travel several hundred miles from the equator toward the poles, along the level surface of the earth, before we become sensible of a diminished temperature; but, when we ascend the mountains between the tropics, when we begin to increase our elevation, a rapid change of temperature is experienced, and those places that are elevated will be colder than those at the level of the sea.

On an average, an increase of 330 feet in altitude diminishes the temperature 1° Fahr.; hence, the rate of diminution is about 3° to 1000 feet.

In large plateaus, however, the effect of altitude seems to be, in some measure, intensified by the great extent of absorbing and radiating surface uplifted into the atmosphere. In general they are considerably warmer than the isolated summits of mountains of the same altitude.

From this effect of elevation upon temperature, it is obvious that the mountain regions of the torrid zone have great varieties of climate.

In this region we may find vines at the base of the mountain. The region of **vines** rises from the level of the sea to a certain height; in this zone of vegetation may be found the date-tree, the sugar-cane, the fig, and the olive; next come the hardy species of trees, as the oak, the laurel; higher, the birch, the pine, and the firs; higher still may be found the grasses; and, beyond, a few plants and lichens; and, still beyond, the vegetation ceases entirely, and we have reached the line of perpetual snow.

NOTE.—Illustrate the zones of vegetation by a diagram at the board, using colored chalk.

From these facts we gather that the tempera-

ture of a place depends not on its latitude alone, but on its elevation, or, as it is called, its altitude.

CAUSE.

The lower and denser strata of the atmosphere absorb the greatest amount of the sun's heat, and are necessarily the warmest; the atmosphere is not much heated by the direct rays of the sun, but receives heat mainly by radiation from the earth surface.

*First Modification.*—**The altitude of a place modifies the climate.**

---

Mountains also modify the climate of large area of lower lands in their vicinity. Their elevation intercepts the moist currents approaching from the oceans, and their cold summits condense the moisture, causing it to be precipitated.

Consequently, the winds, on leaving the mountains for the interior, are dry, and give the characteristic of dryness to the climate of the interior areas. This modification is well illustrated in our own country by the climate of our Western Plains, which are influenced in their climatic conditions by the high, cold wall of the Rocky Mountains.

The valleys west of this range have abundant

rainfall, and, consequently, rich fertility, while those to the east have almost perpetual drouth, and consequent sterility.

Therefore, another modification of climate is the proximity of mountain ranges.

*Second Modification.*—**The proximity of mountain ranges modifies the climate.**

---

Heat causes winds. Winds are motions of parts of the atmosphere; warmer portions expand, become lighter, rise, and their places are filled by cold air.

Hence, tropical heat causes an ascending warm current of air at the equator. The heavy cold air from the poles, flowing toward the equator, causes **Trade Winds** on each side of the equator.

Ascending air cools, contracts, and descends to the surface beyond the tropics, meets the polar currents, and forms the return currents.

The motion of the earth causes the polar and return currents to be turned from their northern or southern direction, and they take a northeastern or southwestern course.

The character of a wind depends upon the region whence it comes. *Winds* from the equa-

torial regions carry into the middle latitudes some portion of the heat of the tropical regions; while polar winds bring the low temperature of the latitudes whence they come.

If there is nothing to break the force of the icy winds coming from the arctic region, we may expect that country to be cold even if it is pretty far south; on the other hand, if there is nothing to break the force of the hot winds coming from the torrid region, we may expect that country to be warm, even if it is pretty far north.

In the United States the winds from the north are usually noted for their coolness, a property they derive from the frozen regions of Hudson and Baffin's Bay, while those from the south, coming from the Gulf of Mexico, impart a mildness throughout the whole country.

The comparatively mild climate of the British Isles is owing to the prevalence of main currents of air which are warmed by sweeping over the regions of the Gulf Stream.

In the same latitude the shores of Greenland and Labrador are washed by the icy waters of the arctic currents and swept by the polar winds.

The one region has a mild climate, and is occupied by the most enlightened nations of the world; the other is a frozen waste, sparsely in-

habited by degraded savages and European traders.

We gather from these facts that the climate of a place depends not alone on its latitude, altitude, or proximity to mountain-ranges, but on the character of the winds.

*Third Modification.*—**The prevailing winds at a given place modify the climate.**

---

Oceanic climate is characterized by uniformity. *Water* has a great capacity for absorbing heat, and but feeble conducting power; hence, the ocean grows warm slowly under the rays of the sun, and never attains a high temperature. It also radiates heat slowly, and as fast as the surface-particles become cool, they sink and are replaced by warmer ones from beneath; hence the cooling process is as gradual as the heating, and neither produces extremes of temperature.

The ocean retains the heat longer than the land. In the summer the land is warmer than the sea, and in the winter the land is cooler than the sea.

NOTE.—This is a general statement, and does not refer to daily variation of temperature.

The air from the ocean moderates the heat of summer and cold of winter. So the coasts have a more equable temperature than the interior.

The *land* absorbs the solar heat rapidly, and the surface soon attains a high temperature. Especially is this the case when the soil is imperfectly covered with vegetation, as in treeless plains or deserts.

But, when the sun is withdrawn, heat radiates with rapidity, and a comparatively low temperature is soon reached. It is seen that the ocean preserves a much more uniform temperature than the land, hence islands and maritime districts have milder climates than inland regions under the same parallels of latitude. London, though situated in a higher latitude, enjoys a milder climate than Paris. The winters and summers of Ireland are much more temperate than those of any other country in the same latitude.

## SEA-BREEZE.

Let us take an example in Nature, and see what passes on an island alone in the midst of the ocean. Let us remember that the land is heated more readily than the sea. In proportion as the sun rises above the horizon, the island becomes warmer than the neighboring sea.

Their respective atmospheres participate in these unequal temperatures, the fresh air of the sea rushes from all directions under the form of a *sea-breeze*, which makes itself felt along the whole coast, and the warmer and lighter air of the island will ascend into the atmosphere.

During the night it is the reverse. The island loses heat by radiation, and cools quicker than the sea.

Its atmosphere, having become heavier, runs into that of the sea, under the form of land-breeze, and this interchange lasts until the temperature, and consequently the density, of the two atmospheres has again become the same.

This is the phenomenon observed on the eastern coast of Georgia, Florida, and almost daily on nearly all the seaboards.

What takes place here on a small scale in the space of a day, passes on a great scale between the entire continent and the ocean from one season to another. A moment's reflection will enable us to see that these differences of temperature, setting the whole atmosphere in motion, modify the climate of a place.

So it is seen that the water of the sea keeps an island warm in winter and cool in summer.

In the centre of a continent the wind in win-

ter blows over immense fields of snow or ice, and keeps the air cold; and in summer it blows across the heated land, and the air must be very warm; the countries in the centre of a continent have an extreme climate; hence the nearness to, or remoteness of a place from, the ocean modifies the climate.

*Fourth Modification.*—**The proximity of a place to, or its distance from, the ocean modifies its climate.**

---

There are rivers in the ocean called *ocean-currents.* They consist of vast oceanic streams which keep up a perpetual circulation of the waters. Some of them have been traced many thousand miles. All the rivers in the world are insignificant when compared with some of these currents.

They move on steadily through water comparatively at rest, and are often different from the latter in color and temperature. Some are hundreds of miles broad, thousands of feet deep, and have a course embracing the larger part of the ocean in which they move.

Currents exist not only at the surface, but in deep waters, where their course is frequently in a

different direction from, sometimes even opposite, to that of the surface-currents.

The direction and velocity of currents are modified: 1. By the revolution of the earth on its axis; 2. By the constant winds of the Torrid Zone; 3. By being turned aside by the shores.

## CAUSES OF CURRENTS.

The expansion and contraction of water by heat and cold are, perhaps, the principal causes to which currents are due. Heat causes water to become warm; warm water is lighter than cold, and, when certain portions become heated, they rise by reason of their buoyancy, and are replaced by surrounding colder and heavier water; the warmer and lighter water flows toward the poles, an equal quantity of the cold and the heavier water flowing at the same time toward the equator. The ocean-currents assist to cool the tropical and to warm the polar regions.

Evaporation by solar heat causes large quantities of water to pass off in vapor; and it is this excessive evaporation within the tropics which tends to lower the level of the water there.

The revolution of the earth round its axis is still another powerful cause in producing currents,

particularly those of the equatorial regions, which have commonly a westerly direction.

The winds of tropical climates, which blow continuously or during long periods in one direction, also lend their influence in affecting the currents.

The effect of the rise and fall of tides in producing an alternate flowing of currents in opposite direction is perceived in channels between islands, or between islands and the mainland.

Thus, in the channel which connects Long Island Sound with the harbor of New York, known as the East River, strong currents alternately prevail in opposite directions, as the tide ebbs or flows.

The Gulf Stream, which first becomes apparent near the northeast coast of Cuba, has a great influence on climate. The Gulf Stream, as it issues from the straits of Florida, is of a dark indigo-blue; so strongly contrasting with the greenish color of the sea that the line of contact is distinctly traceable by the eye. Near its origin this remarkable current has a breadth of 32 miles and a depth of more than 2,000 feet; off Cape Hatteras the breadth is at least 75 miles, and the depth more than 700 feet.

Its temperature at its origin is about 80° Fahr.;

on an average it is from 20° to 30° warmer than the adjacent waters.

The comparatively high temperature of this great stream modifies the climate of the eastern coast of North America; also as it sweeps across the Atlantic Ocean, in its northeast course to the British Isles and Norway, it modifies the climate of those countries. It will be seen, by a study of the *ocean-currents*, that the polar currents bring cold to the eastern shores of the continents, and the return currents bring heat to the western shores, and that they produce contrasts in temperature in the same latitude on opposite shores of continents. These currents modify the climate; we gather from these facts that ocean-currents modify the climate of a country.

*Fifth Modification.*—**Ocean-currents modify the climate of a place.**

---

The annual quantity of rain that falls in a place considerably affects its climate, by imparting a greater or less degree of humidity or dampness to the atmosphere. In general more rain falls in islands and on sea coasts than in inland districts; among mountains than in level regions; and within the tropics than in the other zones.

## CAUSE OF RAINS.

Heat and winds produce rains. Heat causes evaporation; the vapors rise in the air; air at a given temperature has a certain capacity for moisture; when this limit is reached the air is said to be saturated with humidity, and the least lowering of the temperature causes a condensation of moisture in the form of dew, fog, clouds, or rain; but, if the temperature is raised, the capacity for vapor being increased, absorption recommences.

As long as the amount of vapor present in the air is much less than is required for saturation, evaporation goes on rapidly, and the air continues to absorb the rising vapors. It is, therefore, called *dry* air. When the air is nearly saturated evaporation proceeds but very slowly; when saturation is reached evaporation ceases, and the air is *moist* or *humid.*

Visible masses of vapor resting on or near the ground are called fogs, while those floating in the air a considerable height are distinguished as clouds.

## CONDENSATION—ITS CAUSES.

Condensation and rain are mostly caused by the cooling of currents of warm air laden with

aqueous vapors. Cold causes condensation; the vapors condensed fall as rain; hence rain is caused by the cooling of air laden with moisture. The temperature of tropical winds advancing into cooler latitudes is lowered, the moisture is then condensed, and the rain falls. Cold winds, if saturated, advancing into warmer latitudes become expanded, and their capacity for moisture is increased; they become less humid, the clouds dissolve, and the air becomes *clear* and *dry*.

Winds blowing over plains retain their moisture, but if they strike a mountain they become cooled, and the rain falls. Plateaus usually receive less rain than other forms of relief, because the mountains, which form the borders of the greater number, prevent the vapors borne by the winds from reaching them.

From these facts we see that the annual amount of rain modifies the climate of a place.

*Sixth Modification.*—**The annual quantity of rain modifies the climate of a place.**

---

The nature and covering of the soil have an influence upon the condensation of the vapor in

the air. A region with nothing to shield it from the burning rays of the sun, becomes intensely heated, and imparts to the superincumbent air a temperature so high as to dissipate all clouds which may float into it from the surrounding atmosphere. A covering of vegetation, on the contrary, shields the soil from the sun's rays, keeps its temperature lower, and promotes condensation. And whether a region be bare or covered with vegetation it greatly affects its climate. From these facts we see that the nature and covering of the earth have an influence upon climate.

*Seventh Modification.*—**The nature and covering of the soil modify the climate of a place.**

---

The clearing of forests, the draining of swamps and marshes, the cultivation of the soil, etc., are among the operations of man by which the climate of a country is greatly modified and improved.

Clearing a country of trees has the effect of raising the mean annual temperature, but at the same time greater extremes of heat and cold are introduced. Open grounds are always frozen

deeper than woodlands, but the latter retain the snow and ice of winter to a much later period in the spring than the former.

From these facts, we see that the cultivation of a place modifies its climate.

*Eighth Modification.*—**The degree of cultivation and improvement modifies the climate of a place.**

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Both the moisture and salubrity of a region are influenced by its *vegetation.*

The leaves of trees and plants give forth moisture to the atmosphere, and take from it its carbonic acid; hence the forests receive more rain than treeless regions similarly situated, while at the same time they check the evaporation of moisture from the soil; thus they equalize the irrigation of the surrounding country and augment the volume of its springs and rivers; hence forests effect an important modification of climate.

Salubrity or the health condition depends greatly on the general character of the surface, as to evenness or unevenness. When the areas are even or flat the waters spread over larger surfaces, become stagnant, and charged with decaying vegetable and animal matter.

The adjacent atmosphere receives foul emanations from these unwholesome waters, and the region is thus rendered insalubrious and unhealthful. Where, on the contrary, the surface is uneven or broken, the waters collect into narrower currents and move with considerable velocity, carrying away decaying substances, cleansing the region, and rendering its climate more and more wholesome.

Hence an important modification in a region results from its evenness or unevenness of surface.

*Ninth Modification.*—**The evenness or unevenness of the surface modifies the climate of a place.**

## RECAPITULATION.

### ELEMENTS.

**First Important Fact.**—Temperature—that is, the heat or cold of a place—is an element of climate.

**Second Important Fact.**—Moisture—that is, whether it is wet or dry—is an element of climate.

**Third Important Fact.**—The prevailing winds are an element of climate.

### GENERAL LAW.

The climate of a place depends principally on its latitude.

### MODIFICATIONS.

**First Modification.**—The altitude of a place modifies the climate.

**Second Modification.**—The proximity of mountain ranges modifies the climate.

**Third Modification.**—The prevailing winds modify the climate.

**Fourth Modification.**—The proximity of a place to, or its distance from, the ocean, modifies the climate.

**Fifth Modification.**—Ocean currents modify the climate of a place.

**Sixth Modification.**—The annual quantity of rain modifies the climate of a place.

**Seventh Modification.**—The nature and covering of the soil modify the climate of a place.

**Eighth Modification.**—The degree of cultivation and improvement modifies the climate of a place.

**Ninth Modification.**—The evenness or unevenness of the surface modifies the climate of a place.

KINDS OF CLIMATE.

1. A temperate climate means one that is neither too hot nor too cold.

2. An extreme climate means one that is either too hot or too cold.

3. A genial or salubrious climate means one that is in every way agreeable, favorable to health.

DEFINITION.

The condition of a country in regard to temperature, moisture, and the prevailing winds, is CLIMATE.

## CLIMATE TOPICALLY ARRANGED.

I. Elements.
1. Temperature.
2. Humidity.
3. Prevailing winds.

### II. General Law.

The climate of a place depends principally on its latitude.

### III. Modifications.

1. Altitude modifies climate.
2. Proximity of mountain ranges modifies climate.
3. The prevailing winds modify climate.
4. The proximity of the ocean modifies climate.
5. Ocean currents modify climate.
6. The annual quantity of rain modifies climate.
7. The nature and covering of the soil modify climate.
8. The degree of cultivation modifies climate.
9. Evenness or unevenness of surface modifies climate.

## HOW TO TEACH CLIMATE.

1st. Develop every fact separately.

2d. Develop the *elements* of climate.

3d. Develop the *general law* of climate.

4th. Develop the *modifications* of climate.

5th. Develop the *definition* of climate.

6th. Write the principal facts developed on the board.

7th. Ask the pupils to commit them to memory.

8th. Place the tabulation on the board.

9th. Require the pupils to recite from the tabulation.

10th. Reproduce the lesson.

11th. Illustrate from the board as fully as possible, using colored chalk.

12th. Require the pupils to assign a reason for every phenomenon connected with climate.

13th. Give thorough drill.

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